

IBM

Selectric® Composer

Training Guide





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*Study slanting
carefully*

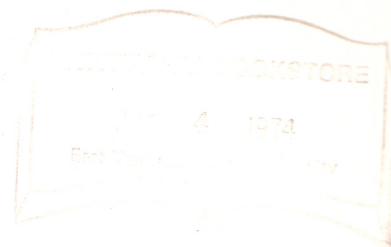


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Introduction

You are about to learn how to use one of the most modern typographical machines available. The IBM Selectric® Composer allows you—in a matter of seconds—to change the style, size, and weight of the type you use.

You can easily change from a large-size type for headings, to a medium size for text material, to a smaller type for captions or forms. You may choose from a variety of type styles to suit the requirements of the job you are composing; and, you have the versatility of typing in a regular, medium-weight type you see in this material you are reading, or a bold weight for emphasis or headings. You can even select an italic type.

The following illustrates some of the variety of type weights, sizes and styles you may select from.

This is Press Roman type, 11-point size. It is a serif style for text or body copy.

This same type in a bold weight is good for emphasis and ALL CAP HEADINGS.

With 8-point type, there is no need to reduce copy for reproduction.

Another variation of the same style and size of type is this Press Roman italic.

Bodoni is another text type. *It, too, comes in a variety of weights and sizes.*

Sizes range from the 12-point above to this 8-point type. Bodoni is based on an 18th-century design.

Pyramid is a square serif style used for text and other applications.

Univers, a sans-serif design, may be used for forms work, catalogs, and headings.

Aldine Roman is a lighter, more delicate design. *This line is in 12-point type.*

Journal Roman is well adapted for books and journals.

Baskerville is used widely in advertising copy.

Classified News is a sans-serif type face used primarily for newspaper classified ads.

Century is still another Composer text type used for lengthy body copy.

All type in this brochure 12 point or smaller was set on the IBM "Selectric" Composer. Headlines were set on the Composer and photostatically enlarged.

One of the many jobs you are able to do with the Composer is prepare copy with justified right-hand margins—as straight and even as those below.

The ability to justify copy easily and quickly is one of the distinct advantages of the new IBM “Selectric” Composer. By merely typing copy once, taking a reading from a scale on the Justification Tube, then setting the Justification Dial, copy is automatically aligned at the right margin as it is typed a second time. Color coding is used to designate pitch on the Type Font, Escapement Lever, and Justification Tube. The idea of color coding for simplicity is used again for taking a reading on the Justification Tube and making the appropriate adjustment on the Justification Dial.

Characters are proportionally spaced on the “Selectric” Composer, just as you see type printed in books and magazines. This proportional space feature, coupled with the ability to use different type sizes, styles and weights, enables the Composer to produce type which looks comparable to that set by a typographer.

You will find an explanation of all the operating principles and procedures required in using your IBM “Selectric” Composer in this TRAINING GUIDE. This book is written and illustrated to include improvements to the Composer. The Composer you will be using may not be exactly like the one used in this book.

As you use this TRAINING GUIDE, make notes in it and keep it handy for reference.

The instructional part of this book is divided into two parts. The first section—making up the major portion of the manual—is “Operating Instructions.” When you have completed this, you will know how to use your Composer for any application.

The second instructional section is called “Refinements.” Once you know the basic theory, you can look in this section for some alternate procedures, shortcuts, or techniques for handling more specialized or unique applications. For your easy reference, this section follows the same format as the main text.

If you would like to practice doing the work as it is explained, use this book’s companion, TRAINING GUIDE SUPPLEMENT. The two are designed to be used concurrently. They are coordinated so that you learn an operating principle in the TRAINING GUIDE , and then go to the SUPPLEMENT for an opportunity to apply what you have learned. Step-by-step directions are provided.

The following symbol † is your signal to look to the bottom of the page for a reference to the SUPPLEMENT for additional practice. SUPPLEMENT references are placed in the left or right margin, and look like this:

†See SUPPLEMENT: Page , Exercise

Operating Instructions

Type Font Removal and Replacement

Single-Element Concept

Single-element typing was introduced with the IBM “Selectric” Typewriter, and the same concept is fundamental to the IBM “Selectric” Composer. Characters are all located on a Type Font instead of the traditional type bars. The Font rotates and tilts to print.

The Font is mounted on a Carrier which moves back and forth across the page as you type, so there is no moving carriage. Fonts are removable—permitting style changes.

With the IBM “Selectric” Composer, changing Fonts means *changing sizes as well as styles of type*. Characters in each type style are proportionally spaced, providing copy that is visually pleasing.

Font Identification

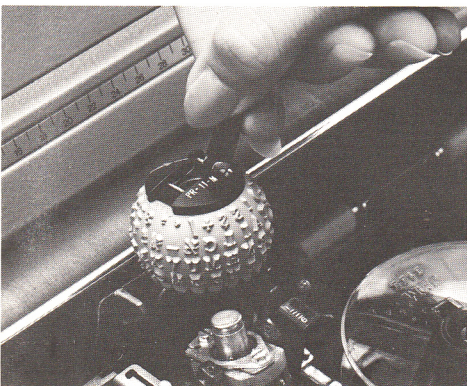
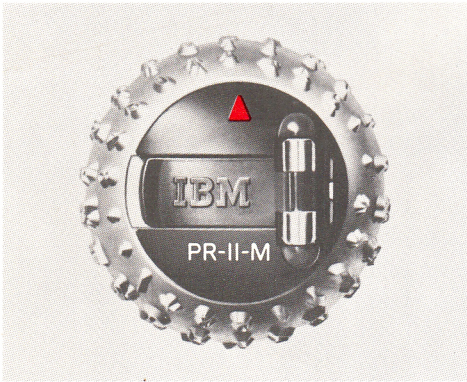
To identify the type on a given Font, a code is printed on the top of the Font. Abbreviations, such as PR-11-M, denote style, size, and weight. The colored triangle specifies the correct horizontal space adjustment for that particular Font. These labels will be explained later.

Font Lock Lever

A Type Font is removed or replaced by using the Lock Lever on the top of the Font. As you hold it in your hand, you see the Lock Lever in the center with the letters IBM embossed across the top.

To unlock a Font already on the Composer, pull this Lever up—bringing it as far to the right as you can until you hear it click in open position. This Lever can then be used as a handle with which to pick up the Font.

To insert a Font, pull back the Lock Lever, place the Font on the Carrier Post with the colored triangle pointing toward the Platen, and push the Lock Lever back down to lock the Font on the machine. (Be sure the Shift Key is not locked down when inserting the Font. That turns the Post halfway around, out of position for the pin to fit into a groove on the Font.)



Paper Insertion

Paper Release Lever and Paper Bail

To insert paper in your machine, pull the Paper Release Lever forward. As you do, the Paper Bail comes forward automatically. Drop the paper behind the Platen, and snap the Paper Release Lever back again. Pulling the Release Lever forward positions metal “fingers” to help guide the paper into the machine. When you drop the paper behind the Platen, it rests on these fingers, ready to be fed in evenly. It is important to move the Paper Release Lever back quickly so all Feed Rolls grab the paper simultaneously and maintain this proper alignment.

Index Key

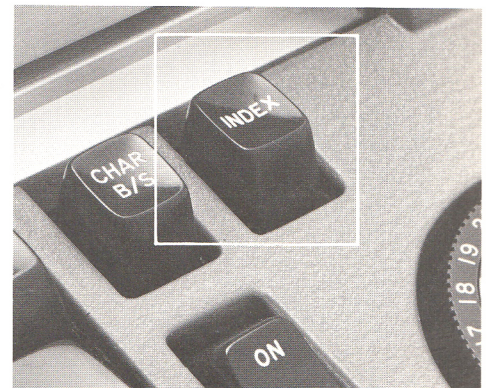
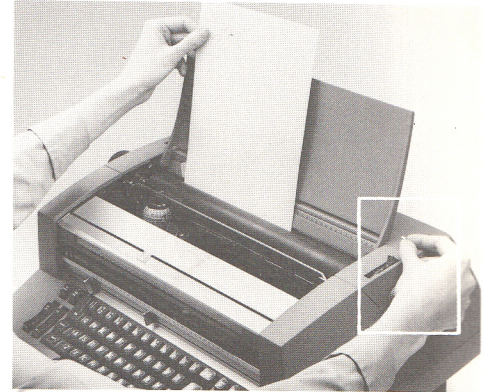
To feed the paper into the machine automatically, restore the Paper Release Lever to its original position, then depress and hold the Index Key. (Using the Index Key is faster than using the Platen Knobs on your “Selectric” Composer, because the Knobs move in small increments to help you do exacting work such as the preparation of forms.)

The Index Key is actually a two-step key. Depress it once with the normal, light, flicking action and it line spaces once. But give it a little extra pressure, to push it down to the second level, and you get a repeat action.

Line spacing with the Index Key does not cause the Carrier to move. However, depressing the Carrier Return Key will line space the paper and, at the same time, return the Carrier to the left margin.

Also, use the Index Key to remove paper from the Composer. Depress and hold the Index Key until the copy just typed is above the Paper Bail. Then pull the Paper Release Lever forward to remove the paper completely. Removing the paper this way may prevent any possibility of smudging.

Before going into further operating details, you may wish to type on your Composer to get the feel of it and see the kind of copy it produces. Turn to the TRAINING GUIDE SUPPLEMENT for additional instructions and material to type.†



†See SUPPLEMENT: Page 2, Exercise 1

Measurements

Picas and Points

Composition work deals with setting up material in type styles of varying sizes. This involves measuring type, the space between lines, and other areas smaller than an inch. Typesetters, to avoid calculating in fractions of an inch, have developed their own units of measurement—"picas" and "points." There are six picas to an inch, 12 points in one pica.

This is not unusual when you stop to think about it. Certain units of measurement lend themselves well to particular areas of activity. For example, yards, feet and inches are part of every person's vocabulary. When you are told that a person is six feet tall, you can quickly visualize his height with considerable accuracy.

Likewise, you will soon adopt the typesetters' handy terms of the trade to use your IBM Composer to advantage. To review:

$$\begin{aligned}6 \text{ picas} &= 1 \text{ inch}^* \\12 \text{ points} &= 1 \text{ pica}^* \\(72 \text{ points} &= 1 \text{ inch})\end{aligned}$$

Look at the Scales on your IBM Composer. They are calibrated—marked off—in picas.

In addition to the Scales *on* the Composer, the Conversion Scale in the back pocket of this book provides various scales and information. For your convenience in measuring material taken out of the Composer, there is a Pica Ruler on the bottom front of the Conversion Scale and a Point Ruler on the right edge of the back.

Generally speaking, horizontal measurement is expressed in picas while vertical measurement is in points. Vertical measurement is done to a "finer point" because of measuring the height of letters (which vary on the Composer from approximately 6 to 12 points) and the white space between lines of type.

*To simplify relating picas and points to inches these measurements on the Composer are exact fractions of an inch. The Composer pica is a sixth of an inch (.16666), while the typesetters' pica is .16604 of an inch. Also, the Composer point is a seventy-second of an inch (.01388), while the typesetters' point is .013837 of an inch. The differences are minute.

Measuring Type Height

Point Size

The size of type to be used for a particular job is expressed as a certain point size: 7-point type, 10-point type, etc. To give you a feel for point sizes:

This is a sample of 7-point type.

This is a sample of 10-point type.

To explain type measurements, let's first define some basic terms. The imaginary line on which the base of a letter rests is the *base line*. The part of any letter which extends below this line is called the *descender*. Some lowercase letters have a line extending up from the mid-portion of the letters, and such lines are referred to as *ascenders*.

Point size is defined as the number of points from slightly above the highest ascender to slightly below the lowest descender of any type. This allowance of extra space above and below the type is a standard method of measurement in graphics. Thus, if you measure the printed image, it will not reflect the designated point size.

Cap Height

When planning the vertical placement of certain kinds of material, you will be concerned with the height of capital letters. For example, if you are centering an all-cap heading in a box and want the same amount of white space above and below the printing, you are concerned with the "cap height" and not the point size of the type—there are no descenders in capital letters.

A listing of the cap heights for different type styles is given in the Appendix.

Measuring Vertical Line Spacing

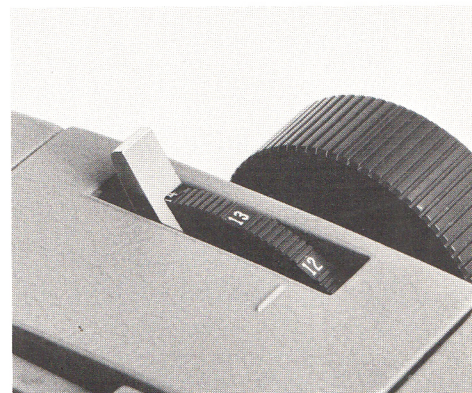
As the term implies, vertical line spacing is merely the act of going from one line of type to the next. You made vertical line spacing adjustments on your regular typewriter when you set it for single or double spacing.

On your IBM Composer you have great flexibility in the amount of line spacing you can have with each return of the Carrier. You can adjust it to line space any number of points from 5 to 20 (which includes type size) by turning the Leading Dial to that number.

They BASE LINE

They ASCENDER
DESCENDER

CAP HEIGHT They



Leading is the typesetters' term for extra white space between lines of type. (The term leading is actually derived from the word lead, because in hot type composition metal slugs are placed between lines of type to allow for this extra white space.)

If no extra white space is inserted, the type is said to be "set solid." The following is 8-point type set solid:

Type may be set solid or leaded by setting your Leading Dial. A point or two of leading will often increase the readability of text type.

However, extra white space gives a better appearance and increases readability, so leading is usually added. This is the same 8-point type set with 2 points of leading:

Type may be set solid or leaded by setting your Leading Dial. A point or two of leading will often increase the readability of text type.

This is called "setting 8 on 10," which means using 8-point type with 2 points of leading for a total vertical line spacing of 10 points. To type 8 on 10 on your Composer, set the Leading Dial for 10.

The amount of leading used is a matter of personal preference and the requirements of the job at hand. It varies with the style of type you are using and the amount of copy you have to fit on a page. If you do not have a lot of copy, you may "open it up" by adding extra leading. Or, if you must "squeeze" the copy to get it to fit on the page, you will reduce the amount of leading.

Conversion Scale

For your convenience, the Conversion Scale has been provided in the back pocket of this book. It is actually a combination of several rulers, a Character Count Chart, a Units Per Pica Chart, a Leading/Inch Conversion Chart, and a Units Per Fraction of an Inch Chart. The various charts and several of the rulers will be explained when necessary in later sections of this book.

The two rulers of interest now are the Pica Ruler and the Point Ruler. The Pica Ruler is on the bottom front of the Scale. It is marked in whole and half picas. The Point Ruler is on the right edge of the back of the Scale and is marked in two-point increments.

If you want experience in using the Pica Ruler and Point Ruler, go to the SUPPLEMENT. It provides illustrations typical of the printed copy in newspapers and magazines as examples of various measurements—such as column widths, leading, and type sizes—expressed in points and picas.

Use the rulers on the Conversion Scale to measure this copy for yourself and to become familiar with these new tools and terms of your profession as a compositor.†

Measuring Width of Proportionally Spaced Letters

As you know, letters and characters vary in size. For example, the letter m takes up more space than the letter i.

At times you will find it convenient to express the exact measurement of a letter. When you do, you will state it in terms of *units*. An i is three units, an m is nine. *The unit value of a given letter never changes*, regardless of whether the type size in which it appears is large or small.

Thus, *the number of units per pica changes with the size of type*. Larger type sizes, coded red on the top of the Font, will have 12 units per pica. Middle sized type styles, coded yellow, have 14 units per pica. The smaller, blue coded styles, have 16 units per pica.

This variety of terminology (points and picas as standard measurements; the number of units per pica varying according to the size of type being used) will come naturally to you as you see that individual situations lend themselves readily to one form of measurement or another. You would, for example, say, “All numerals are six units,” when you are explaining that numbers are all the same size to make it easy to type numbers in columns. However, you would express column width in picas.

Type Styles

One type style can be distinguished from another by its particular design characteristics. For example, letters in some styles have a straight-line appearance, while in others they are more curved—as in the letter y. Some have longer or shorter ascenders and descenders than others because of their artistic relationship to the mid-portion of the characters of that design. Some styles have extra crossing strokes—serifs—at the ends of vertical lines of a letter. Other styles—sans-serif—do not have these added strokes.

iiii
mmmmm

m
| 9 |
units

m
| 9 |
units

m
| 9 |
units

y Press Roman type style
y Univers type style

This type style has serifs.
This is a sans-serif type style.

†See SUPPLEMENT: Page 4, Exercise 2

This is a lightweight type.
 This is a medium-weight type.
 This is an example of bold-face type.

Individual type styles are given names, such as Press Roman, Bodoni, Pyramid and Univers.*

Styles are also referred to as families because they are not only given a name, but they come in different point sizes and different weights as well. As the term implies, the weight of the type refers to the thickness of the lines in the type characters. The common distinctions are medium weight and bold, although you occasionally may use a lightweight style.

Basic Machine Adjustments

Cover/Paper Support

The Cover of your IBM "Selectric" Composer is a dual-purpose feature. When the machine is not in use, the Cover keeps out dirt and lends an attractive appearance to the machine. When you begin working, lift the Cover and it becomes a Paper Support—positioning your paper in such a way that the material you have typed is always easily visible and ready to read.

On-Off Control

To start your machine, press the On part of your On-Off Control. It is a good practice to switch your Composer off when it is not in operation.

Carrier

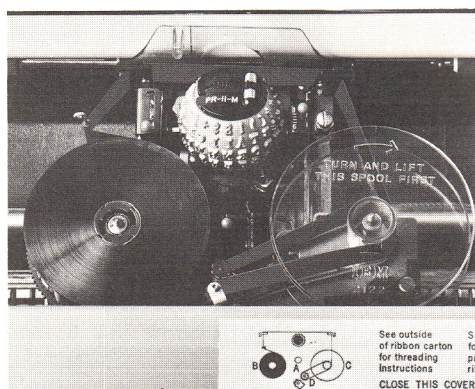
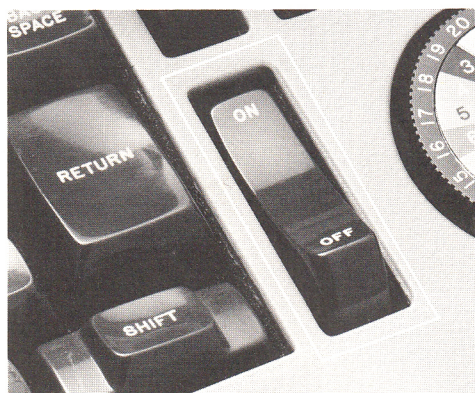
The Carrier is the whole mechanism housing the Type Font, Ribbon, etc., which moves back and forth across the page as you type. The Carrier Cover, which partially conceals the Carrier while you are using the Composer, is hinged and can be folded back when you need to change the Ribbon or adjust the tube you see at the front of the machine. (The use of the tube will be explained later.)

With the Cover back, the Carrier moves only a short distance with each flick of the Return Key.

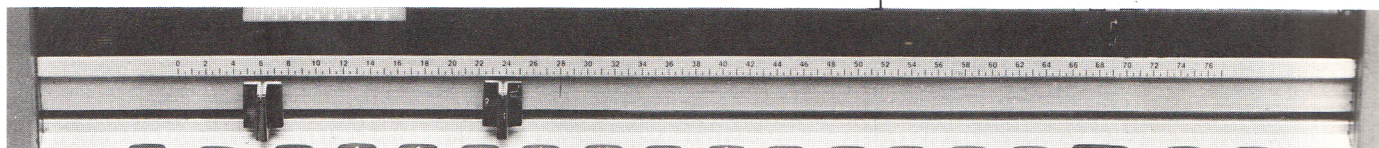
Scales

You have several Scales on your IBM "Selectric" Composer, each calibrated—measured off—in picas. One is

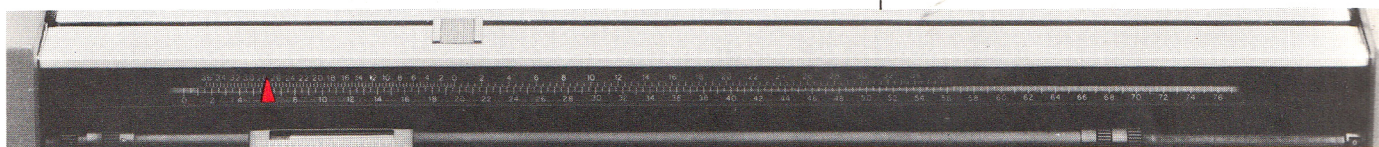
*A complete listing may be found in the *IBM Graphic Arts Type Portfolio*.



the *Margin Set Scale*, placed at the front of the Composer to be used as a guide for Margin Sets.



The Scale above it is the *Carrier Position Scale* with a sliding *Centering Scale* superimposed on it. On the Carrier Position Scale you can see the red indicator which shows



the position of the Type Font on the writing line. (The Centering Scale will be explained in a separate discussion of centering.)



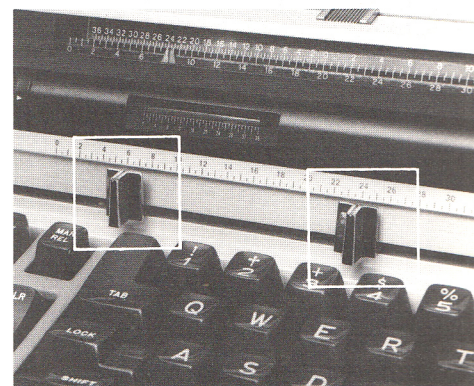
The *Paper Table Scale*, located behind the Platen, will help you insert the paper in relation to the margins set on the Margin Set Scale.

(There may be a Removable Scale, calibrated in picas, on the Carrier Cover of the Composer. To remove this Scale, merely lift the Carrier Cover and slide it out.)

Margin Sets (Left and Right)

To set margins, merely grasp and push in on the Margin Set, then slide it to the desired point on the Margin Set Scale. The left Margin Set can be placed at any whole pica mark on the Scale. The right Margin Set can be placed on both whole and half picas.

If your Carrier is resting at the left margin, and you want to move the Margin Set in to the right, you must move the Carrier first. Otherwise, it will be in the way of the margin



mechanism. By the same token, if your Carrier is on the right margin and you wish to move that Margin Set to the left, the Carrier will need to be moved. Also, if your Carrier is to the right of your right margin, the right Margin Set is locked and cannot be moved until the Carrier is moved. Therefore, it is good practice in placing Margin Sets to first move the Carrier all the way to the opposite side of the machine (i.e., to the right when placing a left Margin Set and to the left when placing a right Margin Set).

A bell will ring when the Carrier is within three-quarters of an inch of the right margin. However, because of the proportional space feature of your Composer, your Carrier will not stop at the right margin. You can type or tab past it.

The left and right margins can be set an inch and a half apart for a minimum 9-pica writing line. (Do not try to force the Margin Sets any closer together than this.)

The right Margin Set can be moved only as far left as 12. Thus, for a 9-pica writing line at the left of the paper, move the right Margin Set to 12; the left Margin Set to 3.

Tabulation Controls

You can set tabs on any whole pica. However, because of the proportional space feature of the "Selectric" Composer, tabs may not be set on any units between picas. To help you go directly to positions where you can set tabs, use the Tab Locate Control. Depress Tab Locate (you need not hold it down since it will stay in place until you set a tab). Then depress the Tab Key any number of times and the Carrier will move from pica to pica, locating automatically every place where you can set a tab.

When you have located the place where you want a tab, depress Tab Set. The Tab Locate Control will automatically return to its normal position when you set the tab. To set another tab, depress the Tab Locate Control again, then depress the Tab Key as many times as necessary to reach the next place you wish to set a tab. You may repeat this process all across the page.

If the copy you are typing ends as close to the next tab setting as four units, the Carrier will stop at that tab setting when you depress the Tab Key.

You can clear all tabs in one operation by positioning the Carrier to the extreme right and holding down on Tab



Clear as you return the Carrier. If you wish to remove one tab, tab to its position, and depress the Tab Clear.

Platen Knobs

When you turn the Platen Knob of a conventional typewriter, each “click” indicates a movement from one line of type to the next. Your Composer works differently, to enable you to do more exacting work. The left Platen Knob of the Composer moves four points at a time. The right Knob moves one point at a time. (Remember that a point is $1/72$ of an inch.)

Leading Dial

The Leading Dial enables you to adjust the Composer for proper vertical spacing. The setting used is determined by the size of type and the amount of space you wish to place between lines.

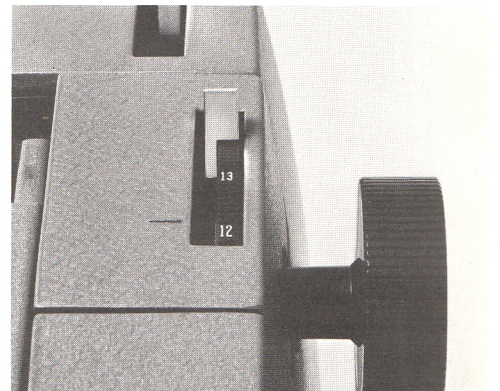
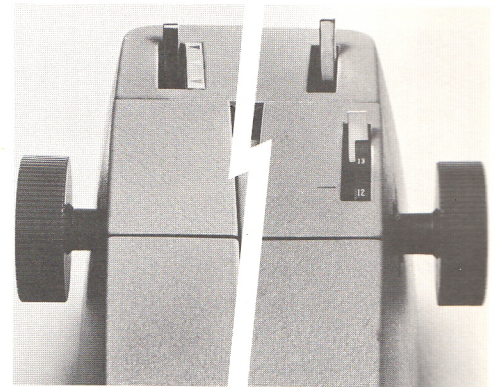
For copy that you wish to set solid—with no additional space between lines of copy—you would set your Leading Dial at the same number as the number of the point size that appears on the Font. (If you are using a 10-point Type Font, you would set your Leading Dial at 10.)

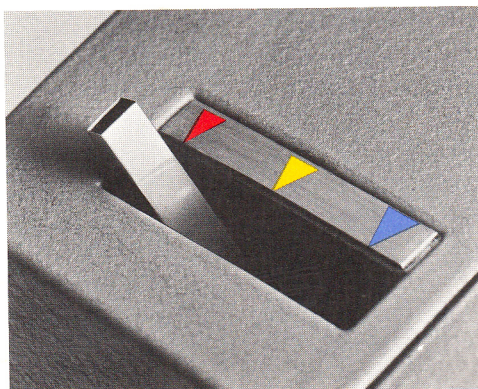
If you wish to add space between lines of type, simply set the Leading Dial on the appropriate number. The difference between the number on the Leading Dial and the number on the Type Font represents the amount of leading you have between lines. For example, if you wish to use an 8-point type and add two points of leading, you would set the Leading Dial at 10. If you select a 10-point type, and wish to add two points of leading, you would set the Leading Dial at 12.

If you have to fit a lot of copy on a page, you may prefer to use only one point of leading. Conversely, if you need to spread the copy to fill a page, you might want to increase the leading to three points. This decision is based on the job you are doing and the effect you wish to achieve.

Escapement Lever

As you know, the number of units per pica changes depending on whether you are using a large (red—12 units per pica), medium (yellow—14 units per pica), or small (blue—16 units per pica) type size. Therefore, the characters of a large type size take up more space across the page





than those of a smaller type size. The amount of space the Carrier moves across the paper for a particular type size is regulated by the Escapement Lever.

The Escapement Control has been color coded for the three widths—red for large type sizes, yellow for medium type sizes, and blue for small type sizes. Correspondingly, each Font has a colored triangle on the top. This tells you where to set the Escapement Lever. If you have placed a Font on your machine which has a red triangle, that means it is a wide type style, and you must set the Escapement Lever for red. If your Font has a yellow triangle, the characters are medium sized. Small type styles are set for blue.

Notice that, when you move the Escapement Lever, the Carrier moves. How far it moves will vary from time to time. Therefore, when you change from one type size to another, change the Escapement Lever *and* space several times *before* returning the Carrier.

Font Selection

To choose the proper Type Font to do a given job, look at the identification printed on the top of the Font.

The first letters are an abbreviation for the *name* of the type style (Aldine Roman in this example). The number tells you the *point size* of the type. The last letter indicates the *weight* of the type—L-light, M-medium, B-bold. An italic type is identified by the letter I in the weight position. Occasionally the letter C will follow the type weight designation. The C indicates Condensed type—a slender version of the normal type face.

Century and Classified News type style Fonts are available as regular Composer Fonts and as specially designed Presswire Fonts. The Presswire Fonts are identified by the additional letters PW below the weight indication. For example, CN-10-M identifies this as a Classified News type

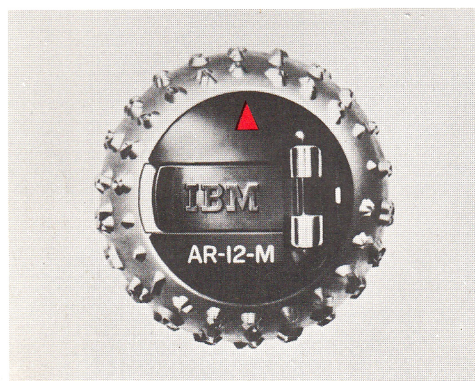
PW

style, 10-point type size, medium weight in the Presswire design.

For an explanation of Language, Technical, Greek, Mathematical and Ruling Fonts, see the "Specialized Fonts" section of this book.

Impression Control

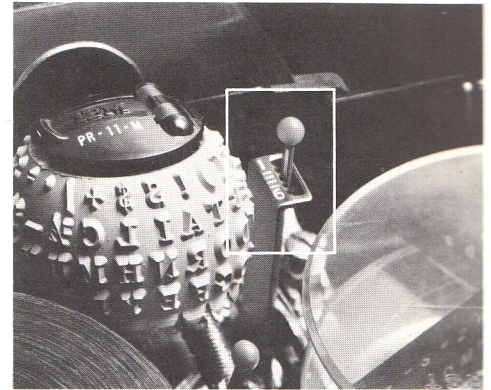
When you are using small type, the characters are light, so the Font does not have to strike the paper with much



force. When you go to a larger and bolder, thus heavier, type, you will want the Font to strike the paper with greater force to get a clear image of the character printed on the paper.

By setting the Impression Control, located at the right of the Type Font, you can regulate the force with which the type strikes the paper. The settings range from one for the lightest pressure to six for the heaviest. To make this adjustment, push the lever to the right and then move it to the appropriate number. When you release the lever, it will click into position.

Experience will soon tell you the appropriate settings to use. For a general reference, the chart of Recommended Impression Settings in the Appendix will be useful. These recommendations, however, are only a general guide and need to be varied to suit the particular machines and supplies you are using. Visual appearance of typed characters should be sharp and clean (uniform in deposit of carbon from the ribbon, without a “furring” or “splashing” effect).



Carrier Positioning

Backspace Keys

You have two Backspace Keys on your IBM “Selectric” Composer. One, labeled Backspace, moves the Carrier back one unit at a time. The other, labeled Character Backspace (Char. B/S) moves the Carrier back one full character at a time.

You recall that the number of units per character varies from one character to another. However, you do not need to memorize the units per character, because the Composer will “remember” for you. You simply depress the Character Backspace Key and the Carrier will move back a complete character regardless of its size. (A space is considered a character when character backspacing.)

Depending upon the number of units per character, six or more characters may be in the “memory” at one time—up to 54 units. Therefore, if you need to backspace more than one character, you can.

If you inadvertently depress the Backspace Key when you meant to depress the Character Backspace, there is no need for concern. Just depress the Character Backspace Key, because the Composer remembers and will go back the remaining number of units for that character.



The Composer memory becomes effective with the *second* character typed after a Carrier return or tab. Each time you Carrier return or tab the previously typed characters are automatically removed from the memory. Typing one character permits the memory to become operative with the second character.

The Character Backspace Key is effective for up to 54 units—six or more characters, beginning with the second character typed after the Carrier return or tab.*

Zero Index Lever

The Zero Index Lever permits you to return the Carrier to the beginning of the line on which you have been typing without line spacing to the next. This Lever is an aid in centering as well as a variety of other operations you will learn as you become familiar with your Composer.

To use the Zero Index Lever, pull it forward and hold it while you flick the Return Key. Release the Lever and it will automatically return to its original position.

Card Holder Alignment Guides

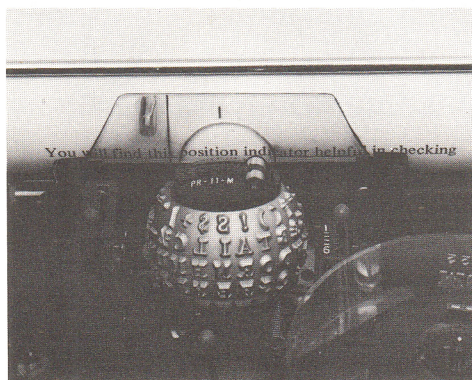
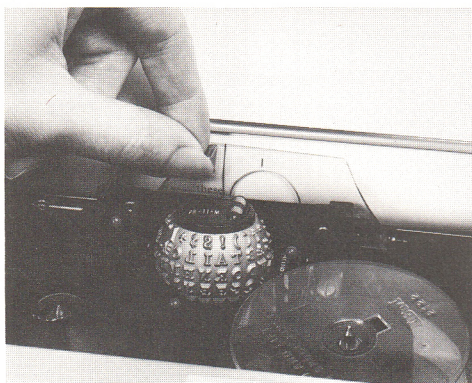
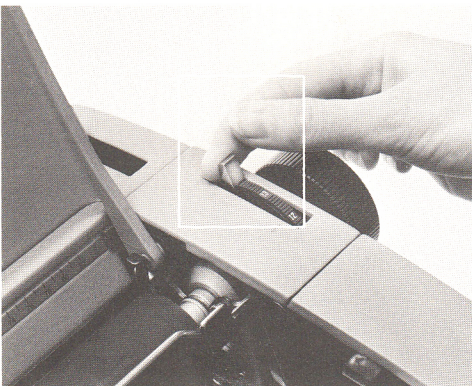
The clear plastic Card Holder contains several alignment aids. The short mark at the top center position of the Card Holder shows the *approximate* printing point on the line. It points down to the right edge of the character just typed.

A more precise alignment guide is the longer, vertical line just left of the Font. Slide the Card Holder to the right as far as it will go and hold it there. This line will then be lined up with the right edge of the previously typed character.

You will find this position indicator helpful in checking to see if you have spaced after a word when you are ready to resume typing after an interruption.

The horizontal lines on each side of the Card Holder are there to help you with vertical alignment. They go along the base line of your typed copy. (Bear in mind that any visual guide will vary in its relationship to the printed copy depending on how you view it. So be sure you are seated in your normal typing position when you use the alignment guides.)

*If you use the regular Backspace Key, then type a character, the Character Backspace Key does not become effective until a second character is typed.



Card Holders are adjustable to suit your individual preference. An IBM Customer Engineer can move the Card Holder on your Composer slightly to alter these lines in relation to the printed copy.

Ribbon Lift Control

The Ribbon Lift Control, located to the left of the Type Font, can be an aid to vertical alignment. If you are trying to place a word or words precisely at a given point on the page, there may be times when you will want to experiment with the placement before actually typing the material.

The Ribbon Lift Control permits you to do this experimenting by causing the Font to strike the page without going through the ribbon. Thus you get an embossed image of the character but no ink on the page. (You will use this typing tip with discretion, of course, depending upon the kind of reproduction for which you are preparing.)

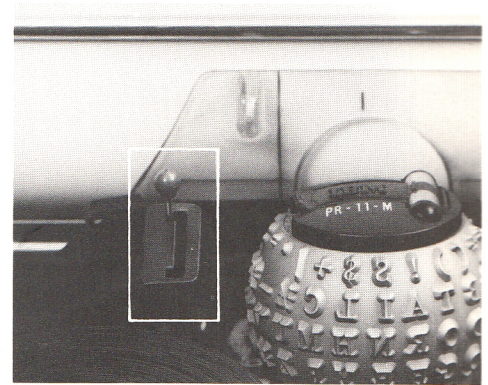
To use the Ribbon Lift Control, move the lever out of the groove in which it is resting, and push it away from you, into the groove in that far position of the mechanism. When you have finished your alignment testing, move the lever back to its original position.

A handy use for this Control is aligning forms in your machine. Choose any character with a straight, horizontal bar as part of the letter. Type this letter at the left and again at the right of the form on a straight line. If the straight bar on the letter you have typed is aligned with the ruling on the form, your paper is adjusted properly. If not, use the Paper Release Lever and straighten it.

Space Bar

The Space Bar on your Composer can be used just like the one on a typewriter—to space between words. Three units is the standard space created by a single depression of the Composer's Space Bar. This, however, can be adjusted by turning the inside dial at the lower right of the machine. Turn the inner knob so that the white line points to one of the colored wedges. The numbers on these wedges represent the unit value of the Space Bar in that adjustment. You can, for example, set this dial at five and create a five-unit space with each depression of the Space Bar. (For rapid movement of the Font across the page you can set the dial on nine, the largest number of units which the dial permits you to space.)

If you wish to space many times, the Space Bar can be depressed and held for continuing action.



Keyboard Arrangement

In order to add symbols needed for printed materials, to be compatible with foreign language Fonts, and to conform with suggestions of the American Standards Association, some keyboard changes have been made.* Take a moment to look at the keyboard and acquaint yourself with its arrangement. Notice, for example, the new locations of the question mark, semicolon, colon and fractions. A discussion of some special changes follows.



Number One

Your Composer has a special key for the number one. It is located on the top row with the other numbers.

All numbers must be the same size so that they can be typed in even columns. For this reason, all numbers are six units wide. Since the letter "I" is only a three-unit character it cannot be substituted for the number one. The special character for number one is six units, to conform to the size of the other numbers.

Underscore

The underscore has been replaced on the Composer Fonts by a character which is used frequently—the dash.

To underscore you can use the horizontal rules on the special Composer Ruling Font. In cold type composition emphasis is generally given to words by the use of italic or bold type faces.

Hyphen and Dash

As you know, there is a difference between a hyphen and a dash in printed materials. The regular hyphen is used to

*Keyboard charts for the specialized Composer Fonts appear in the Appendix.

hyphenate words, or as a part of identification numbers (such as Policy No. A-1933). The dash looks like a hyphen but is longer.

On your regular typewriter, when you wished to type a dash, you had to use two hyphens. Since two hyphens do not join you had a broken line. Now, on your Composer, you have this special mark in the shift position of the hyphen, where the underscore used to be.

Quotation Marks

Left and right single quotation marks are in the shift position over the comma and period, respectively. To make regular quotation marks, type two single quotation marks each for the left and the right.

Before going into a discussion of justification procedures, you may wish to practice typing material in different type styles and sizes using the machine features you have just learned. Your TRAINING GUIDE SUPPLEMENT has material for you to type and instructions on how to set your machine.[†]

Justification

Justification means typing copy so the right margin is straight.

Unjustified Copy

The ability to justify copy easily and quickly is one of the distinct advantages of the new IBM "Selectric" Composer. By merely typing copy once, taking a reading from a scale on the Justification Tube, then setting the Justification Dial, copy is automatically aligned at the right margin as it is typed a second time. Color coding is used to designate

Justified Copy

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[†]See SUPPLEMENT: Page 6, Exercise 3

It is a simple matter of adding extra space between words to spread the lines so they always end at exactly the same point on the right margin. It is simple for you, the operator, because the machine does the spreading automatically.

To justify copy, type it twice. During the first typing, the Justification Tube and Justification Window scale “measure” the line to see how much it needs to be expanded.

For the second typing, set the Justification Dial for the reading you got previously from the Justification Window scale. The line will justify as you type it. Here’s how.

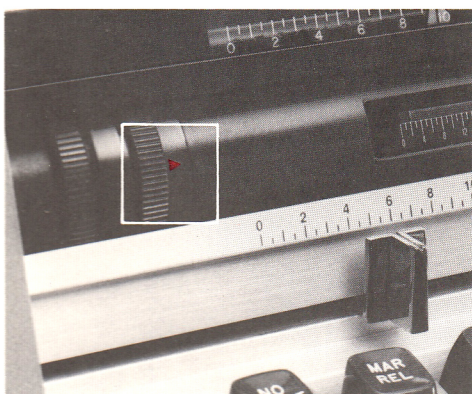
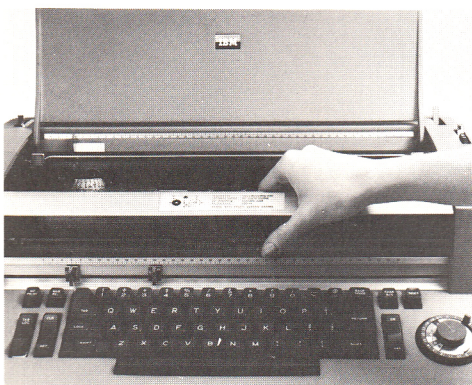
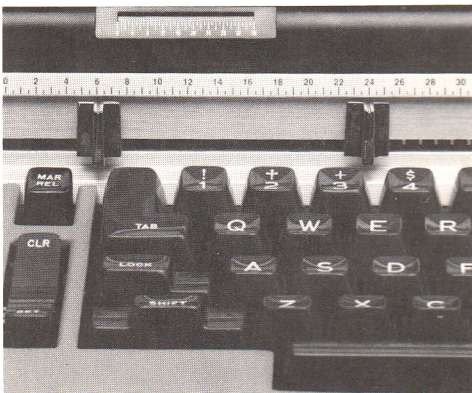
Automatic Justification

When you justify, you have the choice of typing all the rough—unjustified—copy first and then all the justified copy, or a line of rough copy and then a line of justified copy—side by side. For this discussion of automatic justification, we will speak of typing rough and justified lines side by side.

First, determine the length of line you want for your final copy. Set the left and right margins for the required line length on the left half of the paper. Your rough copy will be typed between these margins. Then go to the right and set a tab where you can begin typing the justified line. (To illustrate: If you want a column width of 3 inches, or 18 picas, you might set the margins at 6 and 24 and set a tab at 30, to begin the justified line.)

The Justification Tube makes it possible for your machine to automatically “measure” the length of every line typed—that is, determine how much each needs to be spread to justify. The Tube has three Justification Windows on it, one for each of the three basic sizes of type. You can change from one Window scale to another by merely turning the Tube. First, pull back the Carrier Cover so you can grasp the Tube. Then place your fingers anywhere along the smooth surface of the Tube and turn it. You can tell by the feel of the Tube when it has “clicked” into position.

A colored triangle on the left of the Tube tells you which Window to use for small-, medium-, or large-size type. The color should be the same as that on the Type Font. (You recall that the Escapement Lever is set for the same color code, too: red for large type, yellow for medium-size type, and blue for small.)



Next, “true up” or adjust the Justification Window scale so you can read it accurately. To do this use the Tab Locate* and tab repeatedly to move the Carrier until it is resting on the whole pica preceding the right margin.

As you approach the margin, a white line will move across the Justification Window. When the Carrier is at the pica preceding the right margin, and that margin is set on a *whole pica*, the white line should be at 12 if the Composer is set for red escapement, 14 for yellow escapement, or 16 for blue escapement. (These are the same numbers that represent horizontal spacing on the Composer—12, 14, and 16 units per pica.) When the Carrier is at the pica preceding the right margin, and that margin is set on a *half pica*, the white line should be at the number of units per half pica—6 for red escapement, 7 for yellow escapement, or 8 for blue escapement.

If the white line is not exactly aligned with the appropriate number on the scale, you must true up the Tube so that the white line and the number are aligned. This trueing-up adjustment is made with the serrated bands to the right of the Tube. Pull back the Carrier Cover so you can grasp the bands to turn them.

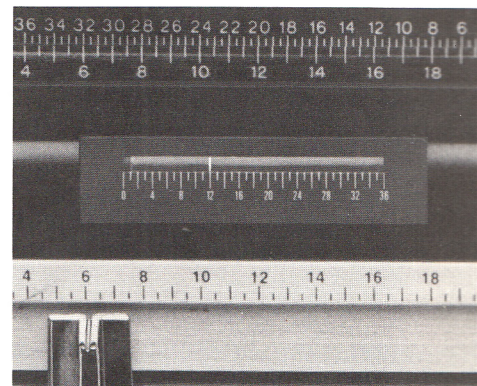
When the white line is to the right of the appropriate number, turn the bands up until the two lines are aligned, or true. When the white line is to the left of the appropriate number, turn the bands down until the lines are true (aligned). The amount of adjustment needed is always very slight.

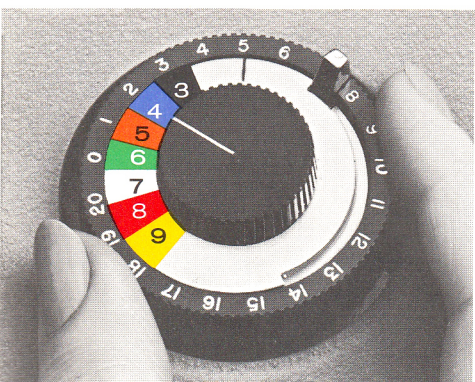
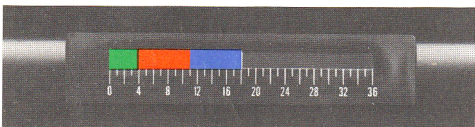
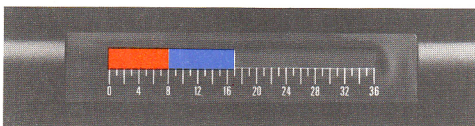
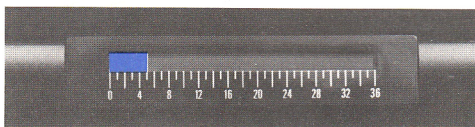
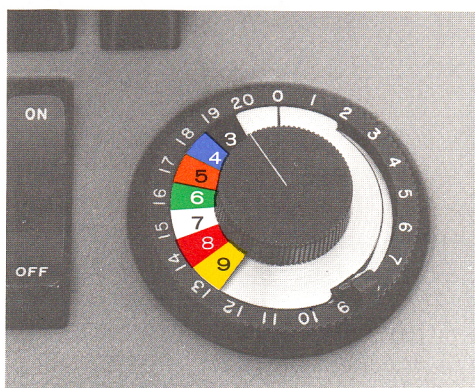
There is a limit to the adjustment that can be made with these bands. When the adjustment limit is reached, the entire Tube will turn, just as it does when you change Justification Windows.

If the Tube is not true and the adjustment limit is reached, make sure the color of the triangle on the Justification Tube matches the ones on the Font and the Escapement Lever. Also, make sure you are trueing up to the correct number—12, 14, or 16 if the right margin is set on a whole pica and 6, 7, or 8 if the margin is set on a half pica.

Verify the accuracy of the trueing up by Carrier returning and repositioning at the whole pica preceding the right margin, before you begin to type. When the Tube is true, all the rough-copy scale readings will be easily read, and the final-copy line length will be exact.

*If you rely on the Space Bar, you could be off a unit or two and not notice it with the naked eye.





Every time you turn the Tube from one Window to another or move the right margin, you should true up the Tube again.

To tell your machine that you want to justify, pull down the Justification Lever on the right side of the Justification Dial. This puts it into a “justifying mode,” causing the Tube to function as you type to measure your line of copy. For example, the proper readings illustrated here are:

blue, 5
orange, 8
green, 4

When you have taken this scale reading, set your Justification Dial accordingly: Turn the inner knob so the white line on the top of it points to the appropriate color. (Ignore the number on the block of color. It is not important to you at this moment.) Then turn the *outer* section of this Dial to line up the appropriate number with the mark at the top of the Dial. For example, if the reading is blue, 5: turn the inner knob so the white line points to blue and the outer wheel so that 5 is at the top, aligned with the mark there. (As you set the Justification Dial, you will notice the Justification Lever flip back up to its original position where it stays for the second typing of the line.)

Now, with the Dial set for automatic justification, all you have to do is tab and type the line again. Repeat this procedure for the next line and the next, and you will see that they are all justified.†

How Justification Works

You have just learned how to justify copy on your IBM “Selectric” Composer. If you are curious to know why you do certain things and how the machine does what it does, you will be interested in reading the following explanation.

First, let’s review the meaning of justification. Justification means typing copy so each line ends exactly at the same point on the right margin. This is done by typing each line twice:

Type a line once, going as near the right margin as you can, but not beyond it. When you have finished, the machine will have measured how many units you are away from the right margin.

† See SUPPLEMENT: Page 8, Exercise 4

Type the line a second time. As you do, the machine automatically adds the extra units required to expand your line so it ends exactly on the right margin.

The extra units of space required to expand the line are placed in the spaces between words. In normal typing on the Composer, each depression of the Space Bar is worth three units. But when justifying this can be increased to nine units in order to stretch a line.

The process of increasing the space between words to justify is best explained by illustration. Let's assume you want a line 18 picas wide and have placed your Margin Sets at 6 and 24. You type nine words in your first line with the customary three units of space between each:

You have just learned how to justify copy on

3	3	3	3	3	3	3	3	3
---	---	---	---	---	---	---	---	---

The line ends five units short of the right margin. These five units must be added to the spaces between words to expand the line. In order for the spacing to look uniform throughout the line, the extra units will be added one at a time:

You have just learned how to justify copy on

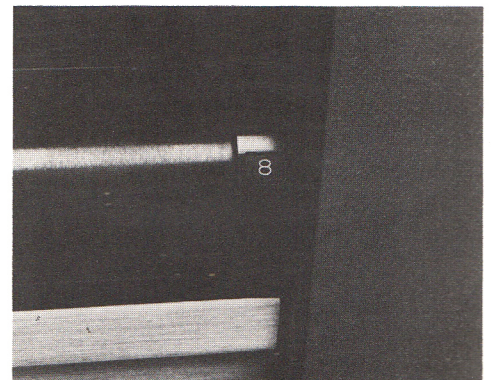
+1	+1	+1	+1	+1+0	+0	+0
----	----	----	----	------	----	----

These units are added to the three units you already had between words, which means in the second typing you will have four units in all spaces between words except the last three where you again have three units:

You have just learned how to justify copy on

3	3	3	3	3	3	3	3
+1	+1	+1	+1	+1	+0	+0	+0
4	4	4	4	4	3	3	3

The mathematics of this procedure is done automatically by your Composer. When you pull down the Justification Lever to do the rough copy, you are telling the machine to count the number of Space Bar strokes in the line. You can see the number of spaces register in the Space Bar Counter Window—the tiny window at the right of the Justification Tube—as you type. In addition, the machine determines the number of units you have stopped short of the margin. It divides this number by the number of Space Bar strokes in the line and adds these extra units to the basic three units per space between words. The “answer” is given when you read the Justification Window scale.



Thus, when you set the Justification Dial to type the line a second time, you are telling the machine how many spaces to make for how many units. The numbers on the colored wedges of the inner dial represent the value of the Space Bar, so we call this portion the Value Dial. In regular typing position, the inner knob points to three. (It is automatically positioned there when you pull down the Justification Lever.) When you adjust this knob for blue you have changed the value of a space from three units to four units for each depression of the Space Bar; when the Value Dial is set for orange, each space is worth five units, etc.

Setting the outer dial tells the Composer how many spaces you want at a given value—so we call this portion of the Justification Dial the Quantity Dial. If the Value Dial is set for blue (four units) and the Quantity Dial for five, you will get five, four-unit spaces. The rest will be three-unit spaces. (As you type, you can see the Quantity Dial jump down one number with each space. When it reaches zero—meaning no more spaces at that value—the Value Dial also jumps to the next lower value and remains there for the rest of that line.)

Refinements

"O.K." Lines

Occasionally, a line of rough copy ends exactly on the right margin and needs no change when typed in the justified column. For convenience, we call this an "O.K." Line.

Your Justification Dial was set for black 0 when you typed the rough copy. (It was there automatically as a result of pulling down the Justification Lever.) Therefore, it should be set for black 0 again when typing the justified line.

Since you have been recording a "b" for blue settings, you would not want to type "b" for black to record your reading. Instead, let x0 stand for O.K. Lines.

Backspacing to Hyphenate

If you have typed beyond your right margin—there will be no color in the Window—and you want to back up and hyphenate that last word, use the Character Backspace. As you back up, you will see color come back into the Window again. When you have gone back the appropriate number of letters, type the hyphen, take a reading, and continue.

Backspacing to Delete a Word

If, however, you cannot hyphenate that last word and must put it on the next line, use the Character Backspace for each letter in that word *plus* the space before it and the last letter of the preceding word.* Retyping this last letter not only lets you see that you have backspaced properly, but it also assures you of a proper scale reading. In case there was some tilt to the Carrier from the backspace movement, retyping a character trues it up. The color will again break in the Justification Window exactly on a scale marking as you had originally adjusted it.

Now that you have backspaced to delete that last word and have restruck the last letter to appear on that line, you are ready to take a scale reading. But, *before you do*, remember that your machine has added a Space Bar stroke to its counter—that space before the deleted word—which is no longer part of your line. Once a space is put into the machine's memory, it is there until the Carrier is returned and the memory is cleared. Therefore, the number of units you are short of the right margin will be divided by the wrong number of spaces, and your line will not be justified correctly. Adjust this by turning the Justification Tube up to read the scale. As you turn the Tube up, you see the colors “zigzag” and the scale reading change.** The colors, in relation to the scale, in this upper position give you your correct reading for that line.

Experimenting to Add a Word

You may want to experiment without spacing between words at the end of a line, when you have color in the Window but are uncertain that another word will fit on this line.

Type the experimental word immediately following the previous word. If, after typing the word, you have a reading of at least blue 3, space once and read the scale again. (The placement of the space on the line does not matter on the rough copy, as long as the space is included for the justification reading.)

However, if after typing the experimental word, you have *no* color in the Window the word does not fit. You simply

*If two spaces are involved, because of ending a sentence, just retype the line.

**The only exception to this is if you are deleting a word so short that, after backspacing, you are near enough to the margin to have a blue reading. In this situation, rotating the scale does not change the reading. Both positions of the Tube give you the same—correct—reading for that line.

character backspace for each letter of the word and read the scale. Because you did not space between the words, it is not necessary to take an adjusted scale reading.

Making Corrections

The appearance of the rough copy is not important; therefore, you can correct typographical errors by merely using the Character Backspace and striking over. Or, if you become confused for some reason, it is often easier to simply begin the line again. Remember, the Zero Index Lever permits you to return to the left margin, yet stay on the same writing line.[†]

Typing Procedures

You have your choice of typing rough and justified lines *parallel* or *serially*:

Parallel Justification

The ability to justify copy easily and quickly is one of the distinct advantages of your new Composer. By merely typing copy once, taking a reading from the Justification Window, then setting the Justification

The ability to justify copy easily and quickly is of the distinct advantages of your new Composer merely typing copy once, taking a reading from Justification Window, then setting the Justifica

Serial Justification

The ability to justify copy easily and quickly is one	o1
of the distinct advantages of your new Composer. By	b2
merely typing copy once, taking a reading from the	o2
Justification Window, then setting the Justification	g1

The ability to justify copy easily and quickly is one of the distinct advantages of your new Composer. By merely typing copy once, taking a reading from the Justification Window, then setting the Justification

In the first, obviously, you type rough copy, then tab and justify. Many people prefer typing serially—all the rough copy first, recording the scale readings, then all the justified copy.

[†] See SUPPLEMENT: Page 10, Exercise 5

The choice is a matter of personal preference. Parallel justification has the advantages of not having to record a scale reading for each line, and you can see finished work as you go along.

Serial justification is popular because you do not have to change back and forth between rough-copy typing and justification. You can pull down the Justification Lever once and leave it there for all the rough-copy typing, then do all the justifying where each line is preceded by a Dial adjustment. Advocates of this method feel it is easier to keep their place in the source copy when doing only one kind of typing at a time (rough or justified).

While the merits of the two systems are subject to personal opinion, there are two definite production advantages to serial justification: It is a convenient way to have people work on a rush job simultaneously; and it helps the person who is copyfitting to know exactly how much finished copy he will have. If the copy is running too long for the space available, the leading can be reduced between lines for the final typing; or, conversely, if you are running short of copy, you can increase the leading when it is justified.†

Justification Varieties

Now that you understand the theory of justification on the Composer, you are ready to carry this basic knowledge a few steps further. Your experience up to now has shown you that justification is really the ability to type copy so the left and right margins are straight. Using the justification ability of your Composer—making a simple procedural modification—you can set copy in a variety of formats.

Reserving White Space

The format of the printed areas is created by reserving white space, the unprinted area, which is as much a part of the format as the printed areas. The white space is carefully planned for both practical and aesthetic reasons.

The white space may be for a paragraph indention (one which cannot be planned for by a pica tab setting);

†See SUPPLEMENT: Page 12, Exercise 6

numbered paragraphs; hanging indentions; slanting margins; or it may be special-effects copy to fit around unusual inserts in text material. The following examples illustrate some of these formats.

Slanting Margins

Slanting margins look fancy, and they are very easy to create. When you are planning to slant both the left and right margins, you increase the number of prefix letters by two for each successive line, beginning with the second line. But only one of each pair of prefix letters is dropped when no-printing these letters for the finished justified copy.

Hanging Indentions

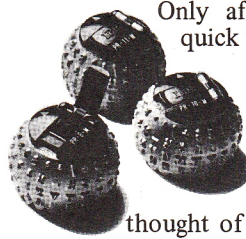
Special effects are created by varying the formats used for setting up copy. This illustration of a hanging indent is one of many varieties used. The simplest way to prepare copy with a hanging indent is to set a tab for the indented lines. With this method, no special justification procedure will be required.

Special Effects

Deadlines. You live with them, we live with them. Sometimes (it only seems like all the time) a sales manager or a client sticks you with a quick-and-dirty job. And you do it.

Only afterwards, nobody seems to remember how quick you did it. Just how dirty it came out.

The Composer will turn out a professional-looking job—as impressive as the copy you’re reading right now. And get it done on time. With the Composer you can justify a line of type, set if flush right, flush left, centered, and probably a lot of other ways we haven’t thought of yet. And you can change type faces and sizes any time you want, in seconds, with around 70 to change to (like this, or this, or this, or this).



You will recall that justification is achieved by adding the extra units at the end of a line to the spaces between words. Therefore, the unit value of a space can change from three units in the rough copy to nine units, when needed, in the final copy.

Spacing (with the Justification Lever pulled down) to reserve white space will result in different sizes of space between the rough and final copies.

You can, however, reserve a specific area of white space to achieve the desired format by adapting the following procedures:

Spacing First—This is the technique of spacing before pulling down the Justification Lever to begin typing the rough copy. The Space Bar strokes reserving the white space are not counted as part of the line, therefore, are not expanded. For final copy, again, space first, then set the Justification Dial.

Tabbing—Set a tab and tabulate (with the Justification Lever down) before typing the rough copy. For final copy, set the Justification Dial, tab, and type the copy. The tabbing method of reserving white space can be used only when the white space is at the beginning of a line. If this method is used in the middle of a line to be justified, the first tab will not move the Carrier the same distance in the rough and final typing, since justification expands the spaces between words.

Typing Fixed Space—Fixed space reserves white space, by typing a character or combination of characters, as if it is a part of the copy. The character(s) selected should be equal in unit value to the specified white space. With the fixed-space method, you use the normal Justification Lever and Dial procedures. But, you actually type the fixed-space character(s) in the areas to be reserved as part of the rough copy. The final copy is typed as usual except when typing the fixed-space character(s) in the appropriate areas, the character(s) are not printed on the paper. This involves the use of the No-Print Key.

The No-Print Key, as its name implies, permits you to type without printing the characters you are striking. The Type Font does not come in contact with the paper; therefore, there is no embossing of the paper (as you are accustomed to getting from a typewriter set on stencil). As you type in “no-print,” you get the same escapement—movement of the Carrier—you would get if the letters were printing.

To engage the No-Print Key, push it down and away from you. To release it, pull it toward you, relax your pressure on the Key and it will return to its original position.

Paragraph Indentions

For most of your paragraph indentions, you will set a tab. This is the most efficient typing procedure.



If, however, you are doing some specialized work, the nature of which calls for a paragraph indention for which you cannot set a tab, use the fixed-space method. For example, if you need a paragraph indention of 18 units, you cannot set a tab. (Tabs are set on picas, and a pica is 12, 14, or 16 units—depending on the size of type you are using.) In this situation, you will want to use two m's, no-printing them in final copy.

Numbered Paragraphs

When preparing copy with numbered paragraphs, such as the following, try to plan to set a tab for the indent position. On the rough and final copy type the identification number, the period, tab, and begin the text using normal justification procedures.

1. The first step in justification is to determine the length of line you want for final copy.
2. The next step is to set a tab somewhere to the right of your right margin to begin the justified line.
3. Set the Escapement Lever for the color which matches the colored triangle on top of the Font.

However, when the tabbing method cannot be used, you will want to vary your justification procedure slightly. The necessity for this becomes evident when you recall that the basic principle of justification is increasing the amount of space you get with every Space Bar stroke. Thus, if you justify in your normal way, the space after identification numbers will vary and the text for the numbered lines will begin at varying points. To illustrate:

1. The first step in justification is to determine the length of line you want for final copy.
2. The next step is to set a tab somewhere to the right of your right margin to begin the justified line.
3. Set the Escapement Lever for the color which matches the colored triangle on top of the Font.

The solution is to use the space-first procedure. Do not pull down the Justification Lever for the rough-copy line until *after* you have typed the one, period, and space(s). Likewise, when you justify that line, do *not* set the Justification Dial until *after* you have typed the one, period, and space(s).

If your format calls for numbered paragraphs with this format:

1. The first step in justification is to determine the length of the line you want for final copy.
2. The next step is to set a tab somewhere to the right of your right margin to begin the justified line.
3. Set the Escapement Lever for the color which matches the colored triangle on top of the Font.

Begin each unnumbered line with spaces before pulling down the Justification Lever for the rough-copy line and again before setting the Justification Dial for the justified line. (Since all numbers are six units and periods three, set the Value Dial for three, and space twice for the numbers, once for the period, and once for each space. *Remember*, when you are using the space-first method of reserving white space, to move the Value Dial back to three if it is on any other number as a result of justifying the previous line.)†

Hanging Indentions

You can see how hanging indentions can be achieved by one or a combination of the procedures for reserving white space. Most of the time you will type this indented copy by merely setting a tab *and tabulating for each indented line*. Only in those rare instances when you want an indention for a point other than a position where you can set a tab will you use the following alternate procedure.

Either tab part way to the point to begin the indented lines and space the rest, or space all the distance of the indention. All you have to remember is to do the spacing *before* you pull down the Justification Lever, and space before setting the Justification Dial.

† See SUPPLEMENT: Page 14, Exercise 7

Another approach would be to use the fixed-space method, choosing a character or combination of characters to substitute for the Space Bar strokes. With the Justification Lever pulled down, tab part of the indentation and type a fixed-space character. You can also type fixed-space characters the total distance of the indent. Of course, you will no-print the fixed-space characters in the areas you want left blank in the final copy.

For example, the indentation is to be 27 units. Check the Unit Values Chart in the Appendix for the character whose unit value is evenly divisible into 27, such as a 3-, or a 9-unit character. Obviously, the 9-unit character m is a good choice, because it will have to be typed fewer times than a 3-unit character. On the rough copy follow normal justifying procedures, but type three m's before the text on each line to be indented. For final copy, depress the No-Print Key and type the m three times, then release the No-Print Key and type the text as you normally would.

Runarounds

You have nothing new to learn in order to do runarounds! It is mentioned only to remind you to use the techniques you have already learned when given material to set in this format.

Runaround is the typesetters' term for copy which fits—or “runs around”—a picture, as illustrated below:

An MT/ST Model II or IV equipped with the Remote Record feature may be recognized by the telephone data set attached to it and by the Line Status Light adjacent to the Revise Carrier Return Button on the typewriter keyboard. To send information from your MT/ST to a receiving unit at a remote location, a link between the two units must be established. This link is called a data connection. The Line Status Light on the typewriter keyboard goes on to indicate that this connection has been made.



The most efficient procedure is to set a tab for the short lines. Since tabs can be set every sixth of an inch (every pica), the layout can usually be planned for this. Otherwise, tab for part of the indentation and for the remaining number of units use the fixed-space method.

A description of what to do if lines are too short to justify will be given later in this section.

Slanting Margins

There are times when copy which is straight on the right may need to be slanted on the left, and vice versa. In other instances, copy will call for slanting right and left margins. The material you are preparing will determine the need for this technique.

Procedure for Slanting Left Margin

First, determine the size indentation you want, and choose a letter or combination of letters which will give you that unit value.* (You will use these characters, and actually type full lines of copy, to take advantage of the justification feature of your IBM Composer.)

Set margins for the width necessary to justify the longest line. Pull down the Justification Lever, and type the first line as you would normally for justification, making a notation of the setting to use for final copy.

Before typing the second line, select a letter which has a unit value equivalent to the width indentation you want. Begin the second line with one of these letters, the next line with two of these letters, the next with three, etc.:

Margins may be slanted any number of units	b2
per line which you feel appropriate for the	b1
mmjob. The unit value of IBM Composer	g5
mmcharacters varies from three to nine.	g5
mmmmSelect a letter which contains the	w3

For final copy, remember to set the Justification Dial for each line. Beginning with the second line, always depress the No-Print Key, type the appropriate number of the letters selected to indent, release the No-Print Key, and finish typing the line. The result will look like the following:

Margins may be slanted any number of units
per line which you feel appropriate for the
job. The unit value of IBM Composer
characters varies from three to nine.
Select a letter which contains the

*See Unit Values Chart in Appendix.

Procedure for Slanting Right Margin

Type the rough copy exactly as you did to slant the left margin. Begin the line with the indenting letter, even though the left margin will be straight in the final copy:

Margins may be slanted any number of units	b2
per line which you feel appropriate for the	b1
mmjob. The unit value of IBM Composer	g5
mmmcharacters varies from three to nine.	g5
mmmmSelect a letter which contains the	w3

For justified copy, you will not type the extra letters. All you do is set the Justification Dial for each line and type. Begin each line at the left margin; the right will automatically be slanted:

Margins may be slanted any number of units
per line which you feel appropriate for the
job. The unit value of IBM Composer
characters varies from three to nine.
Select a letter which contains the

Procedure for Slanting Both Margins

The procedure for slanting both margins is the same as for slanting one with one exception. You are using fixed-spacing letters (for this discussion, let's use the letter m again) for *two* margin areas instead of one, and you are typing m's for both margin indentions *before* typing the line.

For rough copy, type the first line as you would for normal justification. Begin the second line with *two* m's, begin the third line with *four* m's, begin the fourth line with *six* m's, etc.:

Margins may be slanted any number of	r4
mmunits per line which you feel appropriate	b1
mmmmfor the job. The unit value of IBM	o7
mmmmmmComposer characters varies from	b3
mmmmmmmmthree to nine. Select a letter	o2

For final copy, justify the first line normally. For the second line, depress the No-Print Key, and type *only one* m and then the rest of the line. For the third line, depress the No-Print Key, and type *only two* m's and then the rest of the line. Do the same for the fourth and succeeding lines.†

Margins may be slanted any number of
units per line which you feel appropriate
for the job. The unit value of IBM
Composer characters varies from
three to nine. Select a letter

†See SUPPLEMENT: Page 16, Exercise 8

Irregular Patterns

For special effects, such as for advertising copy, you may have occasion to have material with an irregular left and right margin to fit around a picture or diagram, as illustrated earlier in the discussion of white space.

From your understanding of fixed spaces for slanting margins you can readily see that the procedure is the same. "Design" your fixed spaces by determining the number of units you want to allow for white space on each line. Then select the characters which will give you this unit value.* Print these characters as you type your rough copy for justification, and no-print them for final copy.

Special Column Widths

You recall that the left Margin Set can be set on any whole-pica marking, and the right Margin Set on any whole- or half-pica marking. Most of the time, a layout can be designed for column widths compatible with these measurements.

If, however, you do have a layout with critical measurements where you need a column width measured in eighths of an inch, you can still justify such lines. In brief, simply set margins for the next whole or half pica *larger* than the desired column width. Then fill in the extra space with characters of the appropriate unit value, and drop them when typing final copy.

To illustrate: Assume you need a column width of $3 \frac{1}{8}$ inches. Three inches equal 18 picas (6 picas per inch), so start with 18 picas.

Now, to figure the fractional part, let's revert to units. To do this, first review the statistics on the number of units per pica and, in turn, the number of units per inch for each of the three basic sizes of type:

Red	
spacing	12 units per pica x 6 picas per inch = 72 units per inch
Yellow	
spacing	14 units per pica x 6 picas per inch = 84 units per inch
Blue	
spacing	16 units per pica x 6 picas per inch = 96 units per inch

*See Unit Values Chart in Appendix.

Knowing this unit value per inch for each of the three escapements, you can divide the total number of units per inch by 8 to know the number of units per eighth of an inch for each type size:

Units Per Fraction of an Inch

	Units Per Pica	Units Per 1/8"	Units Per 1/4"	Units Per 3/8"	Units Per 1/2"	Units Per 5/8"	Units Per 3/4"	Units Per 7/8"
Red	12	9	18	27	36	45	54	63
Yellow	14	11	21	32	42	53	63	74
Blue	16	12	24	36	48	60	72	84

The above chart is reprinted on the back of the Conversion Scale pocket aid.

Going back now to the column width of 3 1/8 inches, you can look at the summary chart above and see that 1/8 inch for the red setting is 9 units. Red spacing gives you 12 units per pica, so increase your column width by one pica, and type one 3-unit character at the beginning of each line.

For final copy, just set the Justification Dial and type the line, but *do not type* the 3-unit character. Dropping this character causes the line to end 3 units short of the margin, giving you a line exactly 3 1/8 inches long.

If, instead of red you are using a blue setting, you have 12 units per 1/8 inch and 16 units per pica. So set your margins for three inches (18 picas) plus one additional pica. Select a 4-unit character to type at the beginning of each rough-copy line ($16-12=4$).

Follow the same procedure for column widths of other sizes. For example, let's assume you have been given copy to type for the red adjustment, a column width of 3 7/8 inches. Your thinking to determine margins and fixed spacing will be as follows:

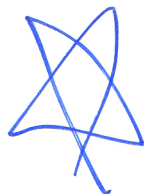
3 inches = 18 picas

7/8 inch = 63 units

With 12 units per pica, there are 60 units in 5 picas, 66 units in 5 1/2 picas.

Set margins for 3 inches (18 picas) plus an additional 5 1/2 picas to allow for the 7/8 inch. For the fixed space use a 3-unit character (66 units in 5 1/2 picas—63 units in 7/8 inch). †

†See SUPPLEMENT: Page 18, Exercise 9



when Black
is on both sides of
the colors

Justifying Especially Short Lines

There may be times when you find you have a line with *too few* Space Bar strokes to justify that line automatically. It is most likely to occur when using a very narrow column width, large type style, and copy with long words.

Another obvious time when this might occur is when you are working with fixed spaces and have filled out a good portion of your line with a series of characters, holding the number of possible spaces on the line to a minimum.

You will recognize this situation quite readily when you look at your Justification Window to take a scale reading. You will see thin bands of color in the middle of the Window, but the color will not go all the way left to zero.

A scale reading for automatic justification *must* be made by “reading color” (not the black background of the Window itself) from zero to the right. Therefore, you must plan to justify by an alternate method.

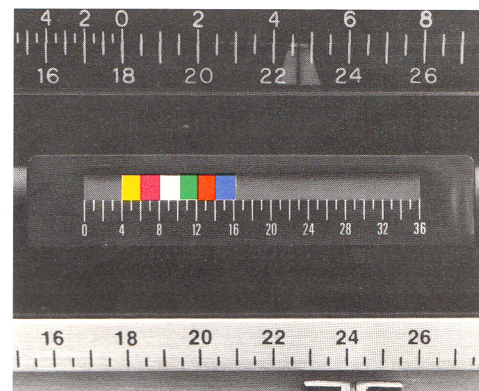
Remember, justification is a matter of distributing the extra units at the end of the line between the words to make the line end exactly on the right margin. You can distribute the space entirely between words—called interword spacing; entirely between letters—called interletter spacing; or combine interword and interletter spacing in a line.

On the Composer, you will plan to use only interword spacing and automatic justification, or interletter and interword spacing and manual justification (adding the space yourself).

Interword Spacing

When justifying short lines, the easiest procedure is to put all the extra space between words. By doubling the interword spaces in the line—spacing twice instead of once after every word—you can still use the automatic justification feature of the Composer.

If, after typing a line of copy, the color bands are still in the middle of the Window, simply strike the Space Bar the number of times indicated by the Space Bar Counter. (This equals the number of interword spaces.) The number of interword spaces in the line is then doubled. The increased number of Space Bar strokes causes the color bands to move toward zero, and you can take a reading as you do normally for automatic justification.



As you record the scale reading also record a notation "x2" to remind yourself to strike the Space Bar twice between each word on the final copy.

For example, let's assume you are justifying the following copy with a large type on a 9-pica line:

Word spacing entire

After typing this phrase, the color bands in the Window have not reached zero. The next word is "lines" which cannot be hyphenated and, if added to this line, will cause loss of the color bands.

You see that the Space Bar Counter has registered two Space Bar strokes, so you strike the Space Bar twice. Now you have a scale reading of green 2. Tab and record the scale reading of "G2x2."

For final copy, set the Justification Dial as usual, remembering as you type to strike the Space Bar twice between each word.

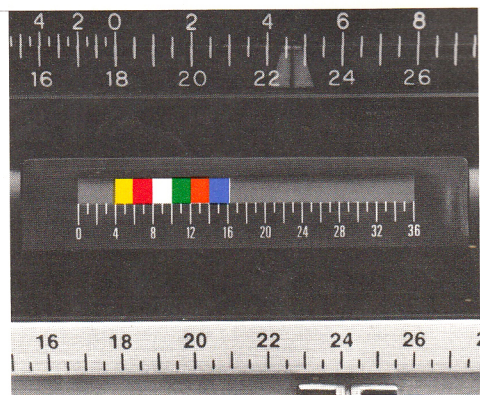
If necessary, the interword spacing can be tripled, in order to get a color-number scale reading. You would triple the interword spacing by simply striking the Space Bar twice the number registered in the Space Bar Counter. The notation with the scale reading would be "x3." When typing the final copy, you would space three times between each word in the line.†

Interletter and Interword Spacing

An alternate method of justifying especially short lines is to distribute the extra space between letters and words. You can manually add the extra space quite easily.

Your first step is to determine the number of units you stopped short of the right margin. To do this, look at the right edge of your right-hand color (blue), and see at what number on the scale it ends.* This tells you how many units you are away from your right margin. When you have read this number (16 in the example), tab to the position where you record your scale readings and type +16.

*If the color bands are not in the middle of the Window with black on both sides, see the "Refinements" section of this book for additional instructions.



†See SUPPLEMENT: Page 20, Exercise 10

When you later justify this line, manually add 16 units. These 16 units are *in addition to the three units placed between words* when you typed the rough copy.

To illustrate, let's assume you are justifying this line with large type for a minimum column width of 9 picas:

unusually long lines

Assume also that the word which follows is "which," and cannot be hyphenated. Thus you have stopped your line 16 units short of your right margin.

To add interletter space to a line or a portion of a line, type a letter; then, with the Value Dial set for 3, space once; use your regular one-unit Backspace Key—not the Character Backspace Key—and backspace two units. (Three units forward minus two units back equals one unit added.)

In our illustration here, you could add eight units between letters in the word "unusually," three units between letters in the word "long," four units between letters in the word "lines," and one unit to the first space between words to total the 16 units to add to the line. The result would look like this:

unusually long lines

As you can see, it would be visually more pleasing not to spread all three words, but to spread only one or two words and add the additional units between words, such as this:

unusually long lines

or this:

unusually long lines

The guide line is to use word spacing whenever possible, reserving letter spacing for more extreme cases. When you do letter space, always plan it so you can letter space an entire word.[†]

[†]See SUPPLEMENT: Page 22, Exercise 11

Justifying Unusually Long Lines

Your Composer has the capacity to count up to twenty Space Bar strokes in a line to be justified. The machine automatically distributes any extra units among these interword spaces to cause the line to end exactly at the right margin.

If you should have a line with more than twenty Space Bar strokes, you can still use the automatic justification feature. Although the Space Bar Counter does not display the number of Space Bar strokes over twenty, your Composer continues the internal mathematics so that you can take a scale reading.

For the rough copy, set the margins and type the copy as usual, without regard for the number of Space Bar strokes. Record your scale readings, which in most cases will be blue.

Before the final copy is typed, scan the scale readings. For each line that does not have a blue scale reading, mark the twentieth word space as illustrated below, this step can easily be performed during proofreading.

Justifying unusually long lines is as quick and easy as justifying average length lines. After the margins are set, type in the usual manner to get the rough copy scale readings. As a part of the proofreading, make a pencil check mark at the twentieth interword space on all lines with an orange, green, white, red, or yellow scale reading. The final copy can now be set. For lines that have blue scale readings, set the Justification Dial as usual and type. The Composer will automatically distribute the space to justify the line. For lines with a

b10
o14
b6
o5

For final copy, set the Justification Dial accordingly and type normally for all lines with blue readings.

But, when the scale reading is *not* blue, set the Justification Dial and type through the twentieth Space Bar stroke. After the twentieth space, move the Space Bar Value Dial to the black wedge (3-unit space value) and type the remainder of the line. It will justify and look like this:

Justifying unusually long lines is as quick and easy as justifying average length lines. After the margins are set, type in the usual manner to get the rough copy scale readings. As a part of the proofreading, make a pencil check mark at the twentieth interword space on all lines with an orange, green, white, red, or yellow scale reading. The final copy can now be set. For lines that have blue scale readings, set the Justification Dial as usual and type. The Composer will automatically distribute the space to justify the line. For lines with a

Occasionally, a long line will have fewer than twenty spaces and a reading other than blue. In such instances type the line using normal justification procedures.†

†See SUPPLEMENT: Page 24, Exercise 12

Flush Right

The term flush right describes lines of copy which are straight at the right margin but uneven at the left, such as these lines:

...A GUIDE TO BETTER LETTERS
PREPARED BY INTERNATIONAL
BUSINESS MACHINES CORPORATION
NEW YORK
PRINTED IN THE UNITED STATES OF AMERICA

or this column heading:

DUAL-CONTROL FOOT PEDAL
Single-pedal operation. Built-in switch for
optional automatic playback of two or four
words. Left side of pedal provides rapid re-
turn action. Non-skid feet.

The sort of material typed flush right—short phrases, or single words—does not lend itself to automatic justification. Therefore, you follow a procedure of making the alignment manually.

The ability to do this is based on the fact that when you type regularly—not justifying—and the *Justification Lever is not down*, a white line appears in the Justification Window as you near the right margin. It works its way across as you type, ending on zero when you are exactly on the right margin. As the white line moves across the Window, it is telling you how many units you are from the margin. For example, if you stop typing and the white line is at 15, you are 15 units from the margin.

With the knowledge you already have of fixed spaces and the use of the No-Print Key, you can probably anticipate the following explanation on composing copy with flush-right margins.

Let's assume you want to type the following:

IBM Corporation
590 Madison Avenue
New York, New York 10022

Type IBM Corporation at your left margin. (Do not space after typing the last letter of the last word.) Begin typing a series of m's. (For convenience in counting them later, capitalize every fifth m.) When you hear the bell ring to warn you that you are coming near the right margin, start watching the white line move across the Justification Window. Type as near the margin as you can without going

beyond it. (An m contains nine units; so when the scale reading is less than nine, you should stop typing.)

After typing the last m, look to see where your white line is on the Justification Window scale. For this example, let's assume it is 1. Tab, and type +1.

Repeat this procedure for each line. Your rough copy will look like this:

IBM Corporation	mmmmMmmmmMmmmmM	+1
590 Madison Avenue	mmmmMmmmmMmmmm	+2
New York, New York 10022	mmmmMmmmm	+0

For final copy, count the number of m's typed at the end of the first line. Then depress the No-Print Key and type the same number of m's to begin this first line of final flush-right copy.

After no-printing the m's, space the number of units indicated by the scale reading recorded at the end of the first line of rough copy (+1). (To space one unit, set the Space Bar Value Dial for 3, space once, and then depress the one-unit Backspace Key—not the Character Backspace—twice. Three units forward and two units back equal one unit of space added.)

You are now ready to type IBM Corporation, and it will end exactly at your right margin.

Repeat this procedure for all three lines. (If the number of units you are to space over before typing requires you to move the Space Bar Value Dial to a number larger than three, remember to move it back again before typing.)†

Leader Lines

Leader lines are a series of dots (periods) used to fill out a line, or to lead the eye from copy printed at the left to copy on the right. You have seen this done in tables of contents, price lists, etc.

The spacing of these dots depends on the specific application. Sometimes they can be typed one after another. For other jobs they must be spread more. Some other situations, where ease of reading is important,

†See SUPPLEMENT: Page 26, Exercise 13

require a procedure for typing the leaders so they are aligned vertically. To illustrate:

Leaders aligned vertically:

Introduction	1
Chapter I	3
Chapter II	15

Leaders not aligned vertically:

Introduction	1
Chapter I	3
Chapter II	15

For leaders where you do not space between the dots, no special instructions are required. When leaders are to be on every whole pica, use the Tab Locate Key to accurately locate each pica; the dots will be aligned vertically. But if leader dots are needed every whole and half pica, and are to be aligned vertically, use the following procedures.

Leaders Typed on Every Half Pica

When using the IBM "Selectric" Composer, type leaders at every whole and half pica marked on the Scale, and they will be aligned vertically.

But before discussing a procedure for accomplishing this, let's review some things you have already learned about your machine.

Review: There are 12, 14, and 16 units per pica depending on the size of type being used. Therefore, per half pica there are:

<i>Type Size</i>	<i>Units Per Half Pica</i>
Large (red)	6
Medium (yellow)	7
Small (blue)	8

Review: Numbers on the colored wedges of the Justification Dial represent the unit value of the Space Bar. With the inner knob pointing to black, a Space Bar stroke is worth three units; pointing to blue, it is worth four units; etc.

Review: A period is always three units. All numbers are six units.

The key to typing leaders every half pica, then, is setting the Justification Dial for the appropriate Space Bar value

so you can type a period, space once, and automatically be on the next half- or whole-pica mark on the Scale.

Since a period is always worth three units, your Space Bar stroke has to be large enough to move your Carrier the rest of the distance to a half- or whole-pica marking on the Scale. With six units per half pica, the period uses up three units, and the space must also be three units, to total six. If there are seven units per half pica (as is the situation when you are using the yellow escapement setting), the period again uses up three units, so the Space Bar stroke must be worth four units to total seven. And, obviously, if your machine is set for the blue escapement, which gives you eight units per half pica, the period is three units again so your space must be five units. To summarize:

<i>Machine Adjustment</i>	<i>Units Per Period</i>	<i>+</i>	<i>Units Per Space</i>	<i>=</i>	<i>Units Per ½ Pica</i>
Red	3	+	3	=	6
Yellow	3	+	4	=	7
Blue	3	+	5	=	8 †

Leaders with Justified Right-Hand Columns

When the information typed in the right-hand column varies in length and is to be justified, as in the following:

Planning for Urban Development	Charles Glass and Ichabod Paine	135
Caring for Household Pets	Philip Cage	226

The material in the text copy (the left and right columns) must be typed first and the leaders filled in afterward. (Remember, you cannot type in the leaders as you justify, because the basic principle of justification causes spaces to vary in size, so the dots would not be spaced evenly nor aligned properly.) Use the automatic justification ability of your machine, modifying the usual procedure as follows.

For the rough copy, pull down the Justification Lever and begin typing the left portion of the line. When you have finished it, do not space. Immediately begin typing the material which is to appear at the right of the line. (Do not space at the end of this last part of the line either.)

You are, of course, not yet near enough to the right margin to take a reading on the Justification Scale. So start

†See SUPPLEMENT: Page 28, Exercise 14

typing a series of m's. Type the m's until you are into the justifying zone and can take a reading from the Window scale.*

To illustrate, if you were typing the following:

Planning for Urban Development Charles Glass and Ichabod Paine 135
Caring for Household Pets Philip Cage 226

Your rough copy would look like this:

Planning for Urban DevelopmentCharles Glass and Ichabod PainemmmmM b2
Caring for Household PetsPhilip CagemmmmMmmmmMmmmmMmmmm o2

To type your good copy, set the Justification Dial; type the first part of the line; then depress the No-Print Key, and type the same number of m's you did in your rough copy for that line; release the No-Print Key; and type the last part of the line. It will be justified.

Use the Zero Index Lever and return the Carrier to the left margin. Depress Tab Locate and flick the Tab Key repeatedly to position the Carrier at the point where you would like to begin typing leaders. Type them according to the instructions given previously for typing leaders on half picas.

If, on the other hand, you are preparing copy such as the following:

James A. Davidson President
Glen Lamar Vice President
Fern Ferril Treasurer

You do not have a sufficient number of spaces between words to justify. So you vary the procedure.

Do not pull down the Justification Lever and read the color in the scale at the end of the line. Instead type without being in the justifying mode. When you end the rough-copy line, look at the white mark in the Justification Window to see how far you are from the right margin—as you did for typing copy flush right.

Type the words in the left part of the line; do not space; type the words appearing in the right part of the line; do not space; type a series of m's until the white mark in the

*It is convenient to capitalize every fifth or tenth letter, for ease in counting, when you go to type your final copy.

Justification Window tells you that you have typed as far as you can without going off the scale; and take a reading of how many units you are from the margin.*

Tab to the side and record the number of m's you typed plus the number of units you are from the right margin. Your rough copy will look like this:

James A. Davidson	President	mmmmmmmmmm	Mmmmmmm	16+3
Glen Lamar	Vice President	mmmmmmmmmm	Mmmmmmm	17+3
Fern Ferril	Treasurer	mmmmmmmmmm	MmmmmmmmmM	20+3

To type your good copy, type the left part of the line; depress No-Print, and type the appropriate number of m's; space for the number of units your scale reading said you need to add to get to the margin; release the No-Print Key; and type the right portion of the line.

Use the Zero Index Lever to position the Carrier, and type in the leader lines.†

Leaders Aligned Within Justified Copy

Sometimes leaders are used to fill out short lines as a part of justified copy, such as in the following:

Lester and Smith, Basic Political Concepts in a Democratic Society , Second Edition (1960)	.....	\$6.75
Asher and Walsh, Secondary School Education in America , Text Edition (1962)	.....	\$4.95
Bergman and Berne, Adolescent Behavior in Economically Depressed Areas , Text Edition (1966)	.....	\$7.00

Actually, the individual lines filled out with leaders are not justified. You just type the copy and then the leaders, but

*If, when typing the rough copy, you do go beyond the scale, just character backspace twice—once for the one m too many and a second time to strike over the last m typed. Retyping the last letter trues up the scale in case it tilted a little when backspacing. Or, if you went only a few units off the scale, use your Backspace Key and back up, counting as you go, until the white line appears again at zero. Then, when you type your code at the side, note with a minus sign that you are to back up that many units instead of spacing forward when typing your good copy.

†See SUPPLEMENT: Page 30, Exercise 15

you type the dots so the last one ends right on the margin, not short of it or beyond it as illustrated below:

Leaders short of right margin:

Lester and Smith, **Basic Political Concepts in a Democratic Society**, Second Edition (1960) \$6.75

Leaders extending beyond right margin:

Lester and Smith, **Basic Political Concepts in a Democratic Society**, Second Edition (1960) \$6.75

Either of these situations will result if you follow the procedure you have previously been taught for leader lines. This is because you typed the period at the beginning of the half-pica increment, and the space filled it out. So you were a space short of the margin, or you were one period beyond it.

The solution to this is simply to reverse the pattern, and the period will line up with the rest of the copy. Merely tab as usual and, instead of beginning by typing a period, space first and then type the period.[†]

Centering

The subject of centering, done on any kind of equipment, is open to much discussion. Basically, it is a very simple idea—placing printed copy in the middle of a given area, either vertically, horizontally, or both. It is merely determining the total amount of “white space” (margin area) available, distributing it evenly in the left and right margins for horizontal centering, and in the top and bottom margins for vertical centering.

One of the basic assumptions to be made in any discussion of centering is whether material is to be centered “exactly” or “visually.”

In visual centering, the margin areas are not the same, but they appear to be, and often the result is more pleasing than if the copy had been centered exactly. Visual centering is applied to vertical placement in large areas to create an “optical illusion.” Since it requires artistic judgment, which comes naturally with experience, the instructions you receive here will be limited to exact centering.

[†]See SUPPLEMENT: Page 32, Exercise 16

Exact centering is a “must” for certain types of applications and is particularly important when working in small areas, such as centering in boxes for forms construction.

Sometimes in cold type composition, you center copy by merely typing material, then cutting it up and pasting it on the page. Sometimes you will be working with pre-ruled paper where a nonreproducing pencil has been used to mark points at which you begin typing. In these situations, your task is a simple one and requires no special instructions.

At other times, it is much more expedient to do the work directly in the Composer, and it is this phase of centering with which we are concerned in this manual.

There are any number of ways the process of centering directly at the machine can be approached and still come up with the same results. The procedures used depend on personal preference and the job being done. Therefore, the procedures chosen for the following discussion are meant only to illustrate fundamental principles and to explain the basic functions of the alignment and centering aids built into your IBM “Selectric” Composer. Once you are thoroughly familiar with the use of these, you can adapt the procedures for your individual needs and develop new techniques of your own.

Horizontal Centering

Pica Ruler

For copy which is to be reproduced in the same type size and format in which it was given to you, place the Pica Ruler on the Conversion Scale over the material you are copying and note the picas at which typing should begin.

Sliding Centering Scale

The sliding Centering Scale superimposed on the Carrier Position Scale enables you to do horizontal centering automatically! For example, to center a heading, all you have to do is:

1. Determine the center of your paper. If it is 8½ inches wide, it is 51 picas wide. Half of 51 is 25½ picas.
2. Position the Carrier at this center point of 25½ on the Carrier Position Scale. (This assumes, of course,

TRAINING TIME ANALYSIS
Quarterly Report

District No.	Total Time		Total No. of People Trained	
	Per Month	Per Machine	Per Month	Per Machine
1	687	156	867	248
2	500	130	743	204
3	643	168	782	211
4	590	191	671	281
5	640	125	830	275

that your paper has been inserted with the left edge aligned with zero on the Paper Table Scale.)

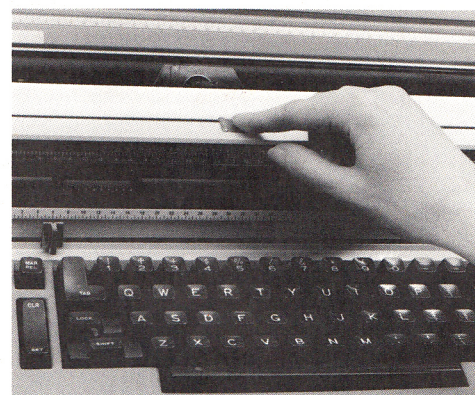
3. Slide your Centering Scale so that zero is also at 25½. (Slide the Scale by pushing the bar located at the front of the machine, above the Scales.)
4. Depress the No-Print Key and type the heading.
5. Now check your position on the Centering Scale (not the Carrier Position Scale). If the red Position Indicator is at 10, backspace the Carrier to the number 10 to the *left* of zero on the Centering Scale. (Note that the numbers run from right to left as you move to the left of zero.)
6. Release the No-Print Key, type the heading, and it is automatically centered.

You notice that the sliding Centering Scale is marked off for every whole and half pica from zero to the right. (The marks from zero to the left are identical except they are only half as far apart.)

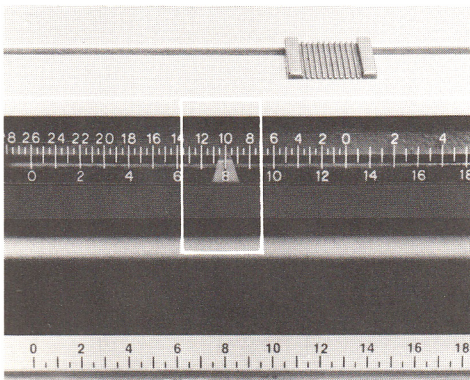
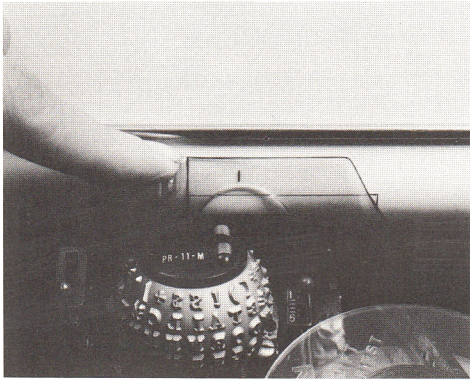
If, when you go to read the Centering Scale after no-printing, you find the red Indicator is between markings, you can take steps to get a more exact reading. Use the one-unit Backspace Key, and backspace until the Indicator is on a mark. Count as you go to determine how many units you were beyond a mark on the Scale. Then, when you go to the left of zero to start typing, go to the same mark on the Scale and backspace half the number of units you did when getting on the mark at the right.

To illustrate, let's assume that, after no-printing, you backspaced two units to get the Position Indicator back on the nearest mark, which happened to be 6. Your next step is to go to the number 6 marking at the left of zero and backspace one unit. (You were two units beyond 6 after no-printing and, since numbers are only half as far apart on the left side of the Scale, you want to go only half of two—or one unit—beyond 6 at the left to begin typing.)†

To center material within a given area—such as headings over columns, words in boxes, on forms, etc.—the principle is the same. Slide the Centering Scale so the zero is at the center point. Position the Carrier at the center also. No-print the line. Take a reading on the Centering Scale. Move the Carrier back to the same number to the left of zero on the *Centering Scale*. Release the No-Print Key, and type the line.



† See SUPPLEMENT: Page 34, Exercise 17



To find the center of a given area, such as the center of a box, first measure it, using the Pica or Point Ruler on the Conversion Scale. Let's say it is 10 picas wide. Slide the Centering Scale so that the number 10 on the *left side of zero is on the left margin of the box*, and the zero will automatically be in the center of the box.

Do this by first positioning the Carrier on the left edge of the box, taking advantage of the alignment marks on the Card Holder. Move the Carrier to the point at which the short mark is at the left edge of the box. This mark is a general guide, not a precise one, but it will get you close. Next, slide the Card Holder to the right and move the Carrier either forward or back to align the longer mark exactly with the left margin of the box. Now your Carrier is positioned properly.

With the Carrier now resting at the left of the box, you are ready to slide the Centering Scale so the number 10, at the left of zero, lines up with the red Carrier Position Indicator.

Once this is done, position the Carrier at zero and center as explained previously.

An alternate method of getting the zero in the center of the box is to put a tiny dot at the center when you are measuring the box with the Pica or Point Ruler. If the box measures 60 points in width, place the dot at 30. (You would, of course, make the dot with a blue, or nonreproducing, pencil.)

Once you have marked the center of the box, use the same procedures described above to put zero of the Centering Scale in the middle of the box: Move the Card Holder to the right, and position the Carrier so the vertical line on the Card Holder is aligned with the dot. This puts the Carrier at the center of the box so you can line up the zero on the Centering Scale with the red Position Indicator.

You are then in position to depress the No-Print Key and center as usual.[†]

Alternate Method of Centering

Zero on the sliding Centering Scale can be moved to approximately 59 on the Carrier Position Scale before the right edge of the sliding Scale comes in contact with the case of your machine. For large forms where the center of a box is farther right than 59, you can center by an alternate method.

[†]See SUPPLEMENT: Page 36, Exercise 18

This alternate method can also be used to advantage when working with a layout which calls for numbers or short words in tiny boxes, as in the following illustration:

STUDENT PERFORMANCE RECORD						
ATTITUDE						
Month	Wk.	100 90	89 80	79 70	69 60	59 50
Sept.	1					
	2					
	3					
	4					

Slide the Card Holder to the right, and position the Carrier so the vertical line on the Card Holder is aligned with the left edge of the box. Then release the Card Holder and *no-print* the word or number to be centered in the box. At this point, slide the Card Holder to the right again, and space until the vertical line on the Card Holder lines up with the *right* edge of the box. Count the units as you space. (Have the Value Dial set for 3. If your final Space Bar stroke moves the black line beyond the right edge of the box, use the one-unit Backspace Key and backspace the necessary one or two units to match up the two lines.)

This procedure of counting the number of units left over after no-printing the copy to be centered tells you how many units you have to distribute between your left and right margins. Return to the left of the box again, space half that number of units, type the word, and it will be centered.

To illustrate, let's assume you want to type the following:

No.

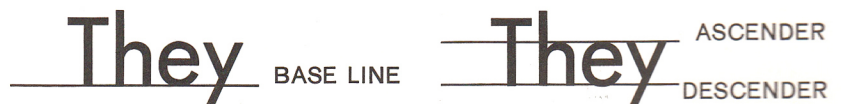
With the Carrier aligned at the left of the box, no-print the word No. Then slide the Card Holder to the right and space until the vertical line is even with the right margin of the box. (Value Dial is at 3.) When you space once, let's assume you are not quite on the line. Space again, and you have gone beyond it. Backspace two units and you are right on the line. You have gone forward a total of four units. You have four units of space left over to divide between your left and right margins.

To center the word, you want two units at the left and two at the right. So reposition the Carrier at the left edge of the box, and space over two units. (Depress the Space Bar once, then backspace one unit.) Type the word No., and it will be centered.†

Vertical Centering

Centering vertically is nothing more than manipulating space to have equal amounts of white space above and below the “inked” impression on the page. You are therefore concerned with *actual* printed size of typed matter, so it will be well to begin this discussion with a review of basic measurements, terminology, and alignment procedures.

Review: PARTS OF A LETTER



Review: CAP HEIGHT

For centering purposes, you are interested in the height of the actual impression on the paper. Therefore, when centering all cap words or phrases, you are dealing with the point size of the capital letters only, not the full point size of that type. There are no descenders to capital letters, so nothing will print below the base line.

A chart of cap heights is printed in the Appendix.

Review: CARD HOLDER ALIGNMENT AID

The horizontal line on the Card Holder runs along the base line of printed copy.

Measuring Space Available

The first step in centering is to know the total amount of space available for centering. The easiest way to illustrate this is to speak again of centering in a box since it has a ruled boundary.

The fastest way to measure the height of the box is simply to measure it with your Point Ruler.

†See SUPPLEMENT: Page 38, Exercise 19

A second way (with the paper in the machine) is to align the horizontal line of the Card Holder along the top line of the box, then turn the right Platen Knob one point at a time, counting the number of "clicks" required to space down to align the black line of the Card Holder with the bottom line of the box. (You can, of course, combine this with the use of the left Platen Knob, counting four points per click.)

Determining Depth of Copy

If you are centering *one line* of copy within a box, learning the depth of copy is simple. It is the *full point size* of the type if typing in upper- and lowercase letters. It is the *cap height* for that type if typing in all caps.

For two or more lines, you are concerned with the number of points taken up for each line of type (full point size for upper- and lowercase lines, or cap height for all cap lines) *plus* the amount of leading between lines. To illustrate, let's assume you are centering these lines using Pyramid type style, 10-point type, with two-point leading:

Employee's Social	----	10
Security Number	-----	2
	-----	10
		<hr/> 22

You will be centering copy with a total depth of 22 points.

If, however, you are centering these same two lines in *all caps* and still want two points of leading between them, your calculations would be different. You would first check your cap height chart to learn that the cap height of 10-point Pyramid type is 7 points. Then your calculations would be:

EMPLOYEE'S SOCIAL	----	7
SECURITY NUMBER	-----	2
	-----	7
		<hr/> 16

Apportioning Space Between Top and Bottom Margins

Once you know the depth of the copy to be centered and the total amount of space available in which to type the copy, centering becomes simple mathematics. Subtract the depth of the copy from the space available. Divide that by two, and you know how many points are to be left at the top and how many at the bottom.

For example, let's assume the box measured a total of 40 points. To center the lines typed in both upper- and lower-case, subtract 22: 40 minus 22 equals 18. Divide 18 by 2, and you find that you allow 9 points for the top margin and 9 for the bottom.

To center the lines typed in all caps: 40 minus 16 equals 24. Divide 24 by 2, and you have 12 points for the top margin and 12 for the bottom.

Finding Base Line to Begin Typing

Once you have determined the number of points to leave for a top margin, you are ready to position the paper at the proper point to begin typing. One way to do this is to align the horizontal line on the Card Holder with the top line of the box and work down from there.

Use either the one- or four-point Platen Knob (depending on how far down you have to go and which one you feel most comfortable using) and space down the number of points to be left blank for the top margin *plus* the number of points for the first line of typing.

To illustrate, let's assume you are typing the all-cap lines in the 40-point box. Start at the top of the box and first come down 12 points. Then come down seven more points to type the first line.

To space down to begin the first line of copy to be typed in both upper- and lowercase letters, your first instinct is to space down for the number of points to be left blank in the top margin plus the point size of the type. When working in a fairly large area, this will be acceptable. A couple of points difference between the top and the bottom margin may not matter—may even be visually pleasing.

In other situations, however, where you are working with only a few points in the margins, you need to be more exacting. The consideration here is the fact that the point size of type, which was used to determine the depth of copy, includes the size of the descender. *But*, you are positioned at the *base line* when you type the copy, and the descender automatically drops below the base line as you type. So for those cases where you are being precise about even top and bottom margins, *do* use the full point size of the type to determine copy depth, but, when you space down to begin typing, space down for points in the

top margin plus the *cap height** *only to get to the base line* to begin typing. The descenders will take care of themselves.

Once you are positioned at the base line to begin the first line, you continue as usual. That is, when typing in both upper- and lowercase with a 10-point type, two-point leading, have your Leading Dial set for 12. After you have typed the first line, merely return the Carrier and type the next.

To type two lines of all caps, 10-point type, two-point leading: cap height is 7 points; 7 plus 2 equals 9; so set the Leading Dial for 9.†

Centering Aids

As a shortcut, there are two charts in the Appendix which tell you how far to come down to the base line to begin typing. One is for centering more than one line of upper- and lowercase copy; the other is for centering single lines. These are prefaced by instructions on how to use them.

Centering in Large Areas

Centering in large areas is really no different from the centering you have just learned in small areas. You still subtract copy depth from total space available to know how much is left to divide between top and bottom margins.

Since your copy depth deals with points, you may want to do all your calculations in points. Or, since this involves large figures, you may want to start with points and then convert them to picas. Remember, there are 12 points in one pica; 72 points in one inch.

*Cap height is used for simplicity. It is accurate to a fraction of a point in most instances. However, there are lowercase letters, such as b, d, f, and l, which may extend above capital letters in certain type styles, but this is generally less than a point. Only in limited cases will the difference be a point, or a fraction of a point, higher than cap height.

†See SUPPLEMENT: Page 40, Exercise 20

Another approach is to think in terms of lines per inch. You know there are 72 points in one inch; so, 72 divided by the Leading Dial setting equals the number of lines per inch:

<i>Leading Dial Setting</i>	<i>Lines Per Inch</i>
5	14.4
6	12
7	10.29
8	9
9	8
10	7.2
11	6.54
12	6
13	5.54
14	5.14
15	4.8
16	4.5
17	4.24
18	4
19	3.79
20	3.6

A copy of the Leading/Inch Conversion Chart above can be found in the Appendix and on the back of the Conversion Scale.

Tabulations

Setting Tabs

When doing statistical work—or typing any information in columns—take advantage of the ability to set tabs as often as possible. Remember, the Carrier will stop at a tab setting when you are as close as four units to that stop when you depress the Tab Key. When space must be apportioned so precisely that you cannot always begin a column at a pica tab position, set a tab for the *nearest* pica; then space forward a few units to begin typing. Handwritten notations on the copy from which you are typing will remind you of the number of units you need to space forward.

To plan your tabulations, first determine the type size to use, and then the margins within which you will be typing.

For example, assume you are setting up the following statistical table with large type (Escapement Lever on red) and with margins of 10 and 41. Once you have this information, you can determine where tabs will be set.

District 1	District 2	District 3	District 4	District 5
\$234,234.00	\$234,234.00	\$234,234.00	\$234,234.00	\$234,234.00
38,920.50	40,392.50	29,987.00	39,111.50	30,000.50
135,492.50	189,483.50	139,308.00	153,829.00	135,789.00
583,394.00	583,293.00	534,245.50	555,555.50	532,423.50
357.50	789.50	678.00	567.00	890.00
57,390.00	89,234.00	78,987.50	65,382.50	67,390.00
300,000.00	400,000.00	200,000.00	300,000.00	400,000.00
983,490.50	899,493.50	789,534.00	977,500.00	978,450.00
834.00	378.00	385.00	900.00	753.00
1,503.50	5,110.50	3,151.00	4,963.50	2,250.00
15,500.00	18,750.00	12,300.00	15,378.50	16,391.50

The next step in planning your tab settings is to type the longest line in each column. Do not space after the last character in a column. Your rough copy will look like this:

\$234,234.00\$234,234.00\$234,234.00\$234,234.00\$234,234.00

Now you want to find out how many units are left over to be distributed between columns. Count them by spacing to the right margin: Set the Space Bar Value Dial on 5 (for ease in counting) and count by 5's as you space across.*

As your Carrier approaches the right margin, the white line will start moving across the Justification Tube Window. Watch the white line, and when it gets to a number on the Window scale which is less than 5, stop spacing. Add this remainder to the number of units you have already spaced across.

(In the preceding example, space five units at a time for a total of 70 units. The white line is then on 2, so the total number of units to be placed between columns is 72.)

In this illustration, you have four areas between the five columns in which to place the 72 units. Dividing 72 by 4 gives you 18 units of space between columns.

To determine where to set tabs, return the Carrier to the left margin, and type the longest line in the first column.

*If you prefer, for visual proof of accuracy, you can type m's and multiply the number of m's typed by 9 units.

Then space 18 units. The Carrier Position Indicator is aligned exactly on 16 1/2, where the second column will begin. At the beginning of the second column on the copy from which you are typing, write 16 + 6 (a half pica in red escapement is 6 units).

Then type the longest line in the second column and space 18 units. The Indicator is exactly on 23. At the beginning of the third column on the copy from which you are typing, write 23. Repeat this procedure for all the columns, and you will have written 16 + 6, 23, 29 + 6, and 36. The copy from which you are typing will look like this:

District 1	District 2	District 3	District 4	District 5
\$234,234.00	¹⁶⁺⁶ \$234,234.00	²³ \$234,234.00	²⁹⁺⁶ \$234,234.00	³⁶ \$234,234.00
38,920.50	40,392.50	29,987.00	39,111.50	30,000.50
135,492.50	189,483.50	139,308.00	153,829.00	135,789.00
583,394.00	583,293.00	534,245.50	555,555.50	532,423.50
357.50	50	00	567.00	890.00

When following the above procedure to determine tab stops, the Carrier Position Indicator may not be aligned exactly on a whole- or half-pica scale mark. In such cases, as you backspace with the one-unit Backspace Key, count the backspaces necessary to align the Indicator exactly with a scale mark. On the copy from which you are typing, write the number of the scale mark *plus* the number of backspaces counted. *Before* typing the longest line in the next column, reposition the Indicator by spacing forward.

Now you are ready to set tabs. Return the Carrier to the left margin and set a tab at each of the whole-pica numbers written on the copy. Remember to use the Tab Locate Control to position the Carrier at the places where you want to set tabs.

When you type the final copy of the columns, the hand-written notations on the copy will remind you where to position the Carrier to begin each column. In this example, after typing the first line of the first column, you see the notation 16 + 6. The notation indicates that you should tab to 16 and space forward 6 units to begin the second column. By following the notations, you will type the table with an equal amount of white space between the columns. However, for many tables, you could simply type the columns at the tab stops that were determined. Whether you follow the notations exactly, or merely type from the nearest tab, depends on how critical the spacing requirements are.

Centering Headings

To determine the center point of a column for centering the heading, you can follow the same procedure explained in this book on centering in given areas (explained by centering in boxes), or you can use this alternate approach.

For headings which are shorter than the longest line in the column, return the Carrier, and type the longest line in a column. Return the Carrier again, and type the heading to be centered over this column. Then push the Card Holder to the right, and space until the vertical line on the Card Holder lines up with the right edge of the last letter in the column (preceding line). Count the units as you space. In the illustration at the right, you space 15 units to get the line to the edge of the number 0.

Divide this unit count (15) in half to know how many units to space over from the beginning of the column to type the heading. (Since you cannot space half a unit, space either 7 or 8 units to begin typing the heading.)

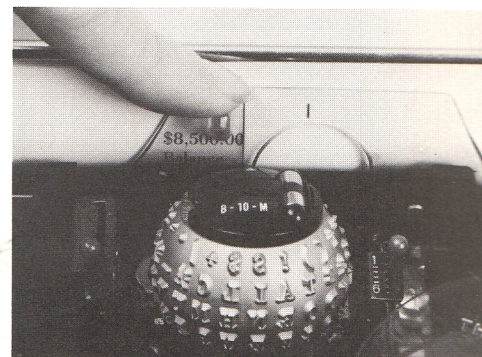
For headings which are longer than the longest line in the column, just reverse the procedure. *Backspace* to line up with the edge of the preceding line, counting units as you go. Type the heading by positioning the Carrier at the beginning of the column and backspacing half the number of units you counted as the difference between lines.

Typing Numbers

Remember, all numbers are six units. The dollar sign is also six units. Periods and commas are three units each.

When typing columns of figures containing both long and short numbers, set your tab for the beginning of the longest number. Then, for the shorter numbers, tab to the beginning of the column, and space over six units at a time to be in position to type.

Set the Space Bar Value Dial on 6; or, if you will be spacing over for commas, too, set it on 3 and depress the Space Bar once for each comma and twice for each digit position you are bypassing. †



† See SUPPLEMENT: Page 44, Exercise 21

Forms Construction

You have nothing new to learn for forms construction. It is included as a special section in this book only to remind you of the basic principles involved. You have performed all of them already.

To illustrate, let's analyze parts of sample forms:

CHECK REQUEST	
Date _____	Amount of Check _____
Payable To _____	
Reason For Expenditure _____	
Voucher To Read _____	

This form has the title typed in the upper right in bold. The captions (Date, Payable To, etc.) at the beginnings of ruled lines are also typed flush right. Type them the same way you would if they were placed at the right of the page: Set the right margin where the typing is to end. To do this, remember that your right margin comes to the left of your machine as far as 12 on the Scale. If this is not far enough for typing these lines, insert the paper in the machine far enough to the right so that these lines can end on 12.

Office or Dept. No.			Approval		
FOR ACCOUNTING DEPARTMENT USE ONLY					
VENDOR:					
Project	Anal.	Office or Dept.	Order or Ref.	Job No.	

The challenge in setting up this second form is centering in boxes and typing in the upper left corners of ruled areas. Remember to use the long vertical and horizontal lines on the Card Holder for alignment purposes.

Other forms call for tab settings or justified paragraphs. But regardless of the format, it is merely adapting basic techniques of composition which you have already learned. Analyze individual jobs and, if you need to review certain procedures, refer back to discussions on basic measurements, centering procedures, typing flush right, justification, etc. One, or combinations of several, of these procedures are used in all forms construction.†

Copyfitting

Before setting copy on your “Selectric” Composer it is necessary to establish the size and style of type to be used and the horizontal and vertical area this type will consume. The system of calculating by character counting and line counting is called copyfitting.

Fitting Space to Copy

If definite specifications have been given as to point size of type to be used, you will want to find the amount of space you need to accommodate the copy you have. Authors, editors, and type buyers frequently need this total page count to determine how many, and what size, photographs and/or line drawings they may wish to include in a publication. Also, printers must have a total page count in order to prepare for paper purchases and to establish the cost of printing a manuscript.

Fitting Copy to Space

In some instances you will be furnished a layout—plan—containing rigid specifications which will include firm horizontal and vertical space allotments. The type style and size to be used may or may not be included in these specifications. Desired line leading is sometimes specified, but may not be accurate.

When fitting space to copy or fitting copy to space, the copyfitting techniques you use will be the same.

† See SUPPLEMENT: Page 48, Exercise 22

Determining Character Count

Look at the accompanying illustration (reduced in size, below) as you follow the instructions for character counting:

← 52 →	
School administrators, business teachers, and	-7
state supervisors of business and office education are	+2
taking a critical look at the education of youth and	
adults for business employment. This is timely. It is	+3
recognized that education for business is a broader,	
more vital field as changing technologies in the office	+3
affect how and what is taught. The American people	-1
live, move, and exist in a business environment. Bus-	+2
iness and office education through expanded needs are	+1
challenged in maintaining quality results.	-10
Improved quality control is planned by leaders in	
the field of business and office education. Business	+1
teachers themselves seem eager to participate in the	
details of planning. This is true for the skills, as	+1
well as, the related subject matter areas. It is also	+2
true on all levels of the educational ladder, from	-2
the junior high school through the college and univer-	+2
sity program.	+13

Draw a vertical line on the right-hand side of the source manuscript page at a point that represents the average line length on the page. (When copyfitting more than one page, be sure to use the same average line-length measure for each page.)

Count the characters on this average line.*

taking a critical look at the education of youth and

“Pica” typewriters have 10 characters to the horizontal inch; “elite” typewriters have 12. IBM Executive® Typewriters vary in horizontal and vertical spacing. If, when using a ruler to measure horizontally, you find you have

*An easy way to determine the characters in an average line is to use the Elite Typewriter or Pica Typewriter Rulers on the back of the Conversion Scale.

neither a perfect 10- or 12-character group to the ruler inch, actually count the number of characters in five or six of the average-length lines to establish a "norm" of the numbers of characters per line.

Measure the number of lines on the page. Standard typewriter spacing is six lines to the vertical inch.

If your source manuscript has not been prepared on a pica or an elite typewriter which produces six lines to the vertical inch, determine the actual number of lines per inch by measuring a full page of source copy and counting the lines. This will give you the accurate lines-per-inch information you need for copyfitting.

Then, to find the total number of characters on the page:

1. Multiply the number of characters per line by the number of lines. In this case: $52 \times 17 = 884$
2. Add extra characters beyond the margin line (including the last short line): $884 + 32 = 916$
3. Subtract characters in short lines: $916 - 20 = 896$
4. Total characters on page: 896

Source copy is counted exactly the same way, whether the job is to fit copy to space or space to copy.

Relating Character Count to Composer Copy

Once you know the number of characters in your source manuscript, you are ready to relate that to the number of lines it will produce on the IBM "Selectric" Composer. When your machine is set for red spacing, you get an average of 2.5 characters per pica; on yellow spacing, you get 2.9 characters per pica; on blue spacing, you get an average of 3.3 characters per pica.

For your convenience, a Character Count Chart is provided in the Appendix and on the front of the Conversion Scale pocket aid. On this chart, you can see immediately the number of characters in any line length from one through 54 picas. The columns headed "Characters" (one for each escapement color) give the average number of Composer characters for a particular line length. (The chart also gives you the equivalent of picas in inches.)

The average number of Composer characters per line for the previous example would be 45. Remember, the copy in the example will be set in red escapement, with 11-point type, on an 18-pica line. To determine the characters per

line, move the slider to the eighteenth pica (the line length); then read the number in the red column headed "Characters."

Your next question is "How many lines of copy, of approximately 45 Composer characters each, will be created by 896 characters, the total number of characters in the example copy?" The answer will be 20 lines of copy (896 divided by 45 = 19 lines and 41 characters).

Next, using the Leading/Inch Conversion Chart on the back of the Conversion Scale, let us determine what copy depth will result from these 20 lines of copy. Set solid—11-point type on 11 points of leading—there will be 6.54 lines per inch. In this example, the 20 lines of copy set solid will be three inches deep (20 divided by 6.54 = 3 inches plus a fraction.)

Suppose that is not satisfactory; you would like the copy to be five inches deep. Divide the number of lines of copy by the inches of copy depth desired (20 divided by 5 = 4). The result is the number of lines per inch you must set for the copy to be five inches deep.

On the Leading/Inch Conversion Chart, glance down the Lines Per Inch column until you come to the number 4. Crossing over to the Leading Dial Setting column, you see 18. Thus, you have determined that, if you set the Leading Dial on 18, you will have four lines of copy per inch, and the 20 lines will be five inches deep.

Specialized Fonts

Your IBM "Selectric" Composer has great flexibility because of its capacity to have Fonts interchanged—from one with characters of the English alphabet, to a Greek Symbols Font, to one for other languages, to a Technical Symbols Font, to a Font with Mathematical Symbols, to a Ruling Font.

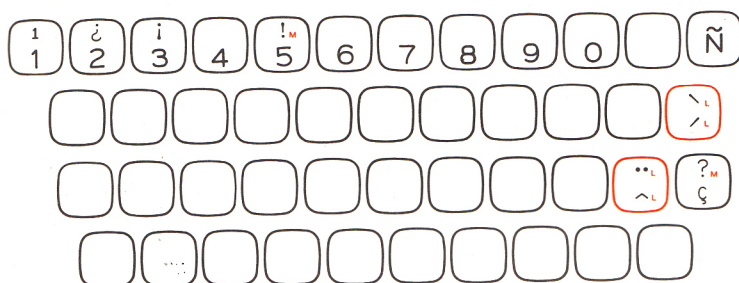
Language Fonts

The Language Fonts are identified by an additional letter printed below the letter indicating the weight of the type. The Language Font identification letters are: G for Germanic, L for Latin, N for Nordic, and UK for United Kingdom. Fonts with no letters below the weight are US Fonts.

The Language Fonts are available in the same type styles, sizes, and weights as the US Fonts. Diagrams of the keyboard arrangements are printed in the Appendix showing the keyboard locations of those letters and symbols characteristic of a particular language.

Dead Key Disconnect (Optional Feature)

If you are going to do a great deal of composition using the Latin Fonts, your Composer may be equipped with two "dead keys" and a Dead Key Disconnect. The dead keys, illustrated below, are the accent marks which must appear above certain letters in French, Italian, and Spanish.



When an accent mark is used, the Carrier will not advance but will remain accurately positioned for the typing of the character under the accent.

The Dead Key Disconnect is located to the left of the No-Print Key. The normal position for the Dead Key Disconnect is down—the Carrier will advance the usual escapement for all characters.

When a Latin Font is to be used, push down and forward on the Dead Key Disconnect Button so that it is in the "up" position and is released. Then, the Carrier will not advance when the characters in the dead key positions are typed.

When a word requires an accent mark in a dead key position:

1. Depress the accent mark key (the Carrier will not advance).
2. Depress the appropriate alphabetic key.

Without the dead key feature, you would need to type the accent mark first, and then character backspace in order to put the Carrier in position before striking the alphabetic character.



Lock the Dead Key Disconnect into its normal position, by pushing it down and back, when any Font other than a Latin Font is to be used.

Symbols Fonts

Font identification is different for the Greek, Technical, and Mathematical Fonts. The first portion is PRX, which means Press Roman, special symbols. In place of the weight (such as M for Medium or B for Bold), the last portion of the identification is an abbreviation for the particular Font—G for Greek, T for Technical, or M for Mathematical.

All Symbols Fonts are in Press Roman type style. The Technical, Mathematical, and Greek Symbols Fonts are offered in three sizes—7-, 10-, and 11-point type.

Keyboard Reference Charts for the Symbols Fonts are printed in the Appendix of this book. (These charts are helpful for determining the keyboard location of a symbol and its Velocity Control Dial setting.)

If you will be constructing technical expressions or equations, request a copy of A GUIDE FOR THE PREPARATION OF TECHNICAL EXPRESSIONS AND EQUATIONS (Form No. G549-0064) from your local IBM office. This manual is a guide to help you learn the most efficient ways to construct technical expressions or equations on the Composer.

Miscellaneous Symbols

Although the Symbols Fonts were designed primarily for use in constructing technical expressions and equations, symbols not related to technical composition are located on the Greek and Technical Fonts.

For instance, the biological and medical symbols found on the Technical Font are the female symbol (♀), the male symbol (♂), and the optical or eye symbol (◉).

Business symbols located on the Technical Font are the copyright symbol (©) and the registered trademark symbol (®). Additional business symbols located on the Greek Font are the commercial “a” (@), the number sign (#), and the pound sterling symbol (£). On Greek Fonts with the identification GJP, the yen symbol (¥) has replaced the section symbol (§).

Punctuation symbols found on the Greek Font are the dagger (†), the double dagger (‡), the paragraph symbol (¶), and the section symbol (§). Also located on the Greek Font is the bullet (•).

The following tariff symbols are located on the Greek Font: ·, °, ○, ⊕, □, ☆, ■, ●, ▲, ★, ◆, △, and ◇.

The small circle or dot may be placed inside any of the open tariff symbols by typing the circle or dot, character backspacing, and then typing the desired open tariff symbol.

Also on the Greek Font is a variety of diacritic marks. Most of these are used with the Greek alphabet; however they can be used in the composition of any language needing the mark. Specifically, the superscript diacritic marks are the rough breathing (´), the smooth breathing (˘), the acute accent (´), the grave accent (`), the circumflex lenis (ˆ), circumflex asper (ˆ), the circumflex (ˆ), the tilde (~), and the diaeresis (¨). To type a superscript diacritic mark over any character except the omega and iota, type the mark, character backspace, and type the character. To place a superscript diacritic mark over the omega, type the mark, character backspace, depress the one-unit Backspace Key twice, and then type the omega. To place a superscript diacritic mark over the iota, type the accent, character backspace, forward space one unit, and then type the iota.

Occasionally it is necessary to combine breathing marks and accents or diaeresis and accents over a single character. To place the combinations above the character, type the first mark, character backspace, type the second mark, character backspace, and they type the character.

There is only one subscript diacritic mark on the Greek Font—the iota subscript (,). This mark is used under only the lowercase alpha, omega, and eta of the Greek alphabet. To place the subscript under the alpha and eta, type the mark, character backspace, and type the character. To place the subscript under the omega, type the mark, character backspace, depress the one-unit Backspace Key three times, and then type the omega.

Velocity Control Dial (Optional Feature)

If the Composer is used to set material with the Language or Symbols Fonts, it will probably have a Velocity Control Dial. The Dial, located to the left of the keyboard, consists of an inner dial for automatic control and an outer dial for manual control of the striking force of the Font.

Each character on each Composer Font is designed to strike the paper at the proper angle and with appropriate force for its size. However, some of the characters on the Language and Symbols Fonts are different sizes than the ones in the corresponding positions on the other Fonts.



Therefore, the Velocity Control Dial compensates for the different sizes of these characters by controlling the striking force.

The inner dial automatically provides the correct velocity for the special characters on the various Language Fonts. Normally, you leave the inner dial set to US. However, when using a Language Font, turn the inner dial so that the white line is pointing to the letter corresponding to the language identification letter on the top of the Font. For example, if you are using a Latin Font for French, Italian, or Spanish, set the dial at L.

The outer dial, also, provides the correct velocity but is manually operated. The four marks you see on the dial indicate the strength of the striking force. You will know the velocity necessary by the letters "L," "M," or "H" which appear beside the characters on the keyboard charts. The relationship of the letters on the charts and the marks on the outer dial are:

Velocity Control Dial Mark	Reference Chart Letter	Striking Force
●	<i>None</i>	<i>Normal</i>
┆	<i>L</i>	<i>Low or Light</i>
■	<i>M</i>	<i>Medium</i>
■	<i>H</i>	<i>High or Hard</i>

Whenever you include one of the symbols requiring a velocity change, turn the Velocity Control Dial to the appropriate mark. Hold the Dial while you strike the character. It is important to remember that you must do this each time you type a symbol with a letter beside it on the Keyboard Reference Chart. After you strike the symbol, release the Dial and it will spring back to the circle which is its normal position. The normal position controls the velocity of all other Fonts and symbols not marked with an "L," "M," or "H."

Ruling Font

The Ruling Font is simply identified by RX-12 printed on the top. The RX means ruling, special symbols; twelve is the point size. There is no weight identification on this Font.

A Keyboard Reference Chart showing the location of the eight horizontal and four vertical rules is printed in the Appendix. A booklet of instructions specifically for the Ruling Font can be obtained from the local IBM office.

Repeat-Action Keys (Optional Feature)

For convenience and speed in ruling, the keyboard locations of the horizontal rules can be repeat-action keys.

If your Composer keybuttons are imprinted with the rules, then the horizontal rules are repeat-action keys. To get repeat action, merely depress and hold the key. For a single character, tap the key with the normal light flicking action. Repeat action is a deliberate, deep depression of the key.

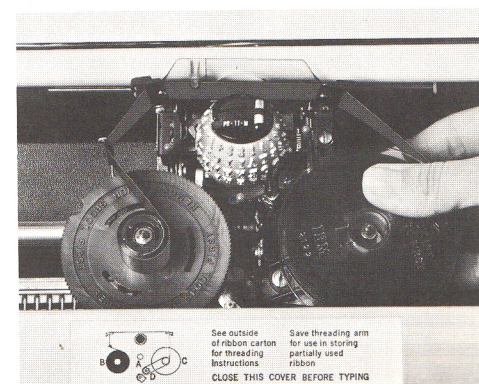
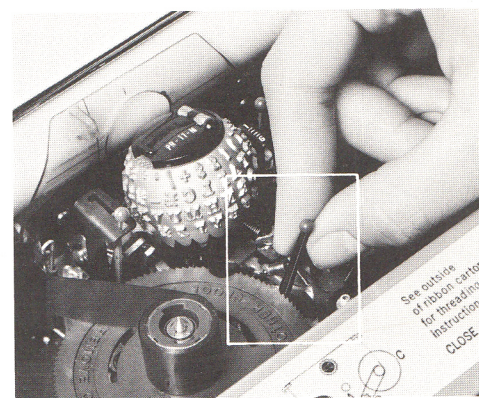
When you use any other Font, characters in these locations also have repeat action.

Ribbon Mechanism

Your IBM "Selectric" Composer uses a unique solvent-film ribbon which is easily removed and replaced. This ribbon, designed especially for the Composer, gives clean, sharp, top-quality images. It is ideal for all types of Composer applications. This ribbon is equipped with a Threading Arm which can be saved and used again if you need to store a ribbon for future use.

Removing Used Ribbon

1. Turn motor off. Lift up the Cover/Paper Support, and fold back the Carrier Cover. Use the diagram of ribbon threading, which you will find on the underside of the Carrier Cover, for reference.
2. Push the Ribbon Load Lever straight toward the Font to lift the Ribbon Guides and open Rollers on the right take-up side.
3. Grasp the plastic take-up spool by placing your right thumb on top and other fingers underneath.
4. Turn the spool in the direction of the arrow; then lift take-up spool and ribbon core out of the Composer and throw them away.



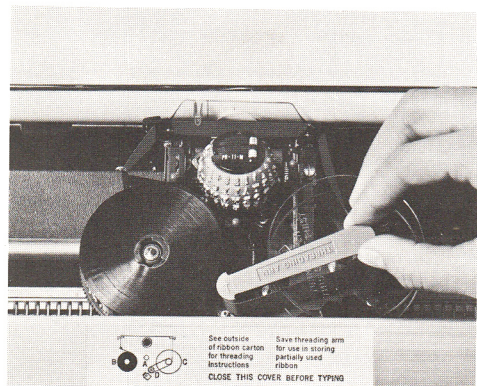
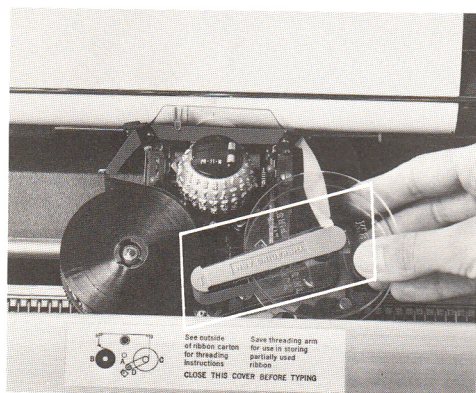
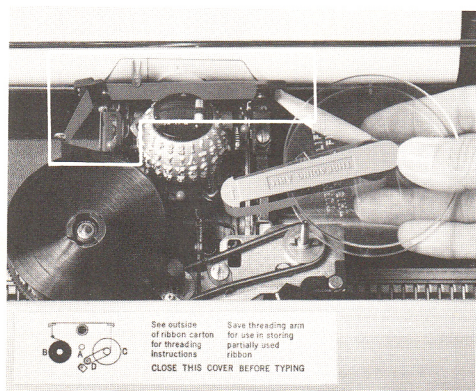
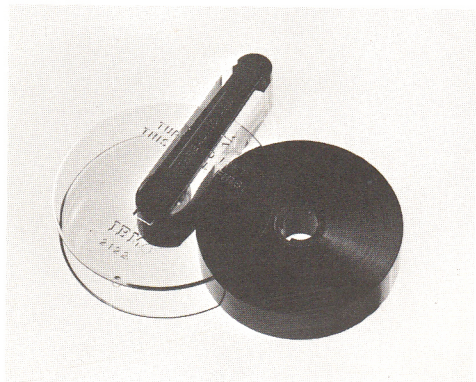
Installing New Ribbon

1. Remove plastic wrapping and cardboard insert from the new ribbon, but leave the Threading Arm in position.
2. Grasp the clear plastic spool in your right hand.
3. Drop ribbon onto left Spindle.

4. Still holding plastic spool, feed ribbon around Staff and through the left and right Ribbon Guides.

5. Position take-up spool over right Spindle so that arrow of Threading Arm is over the Roller.
6. Drop Threading Arm down over the Roller as you push take-up spool onto its Spindle.

7. Ribbon take-up spool will click into place, and the Threading Arm will automatically pop up from the spool. Remove the Threading Arm.

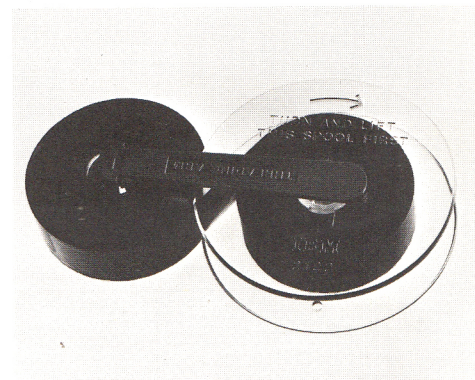
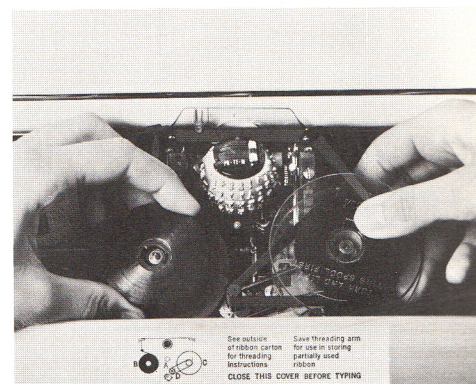
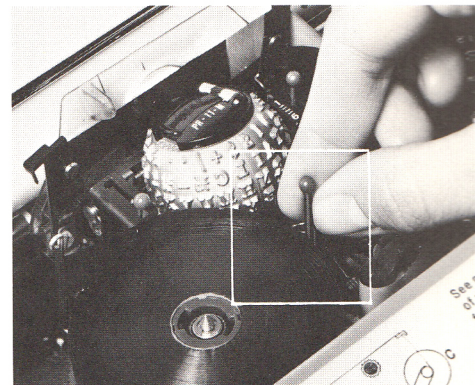


8. Pull Ribbon Load Lever toward you so Ribbon Guides will drop into place behind Font and Rollers will close.
9. Reposition Carrier Cover.

Removing Partially Used Ribbon

If you want to remove a partially used ribbon and store it for security or other reasons, you can. By saving the Threading Arm which comes with a new ribbon, you can use this Threading Arm to lock the two spools together for ease in storing.

1. Turn motor off. Lift up the Cover/Paper Support and fold back the Carrier Cover. Use the diagram of ribbon threading, which you will find on the underside of the Carrier Cover, for reference.
2. Push Ribbon Load Lever straight toward the Font to lift the Ribbon Guides and open Rollers on the right take-up side.
3. Remove both ribbon spools, turning each to release and lift out.
4. Lock two spools together for storage by breaking off end of Threading Arm and dropping that end into clear plastic spool, the other into the core of the ribbon spool.
5. Ribbon is ready for storage.



Reinstalling Partially Used Ribbon

1. Remove Threading Arm from ribbon spools.
2. Push Ribbon Load Lever toward Font.
3. Grasp the clear plastic spool in your right hand, and drop ribbon spool onto left Spindle.
4. Feed ribbon around Staff and through the left and right Ribbon Guides.

5. Still holding plastic spool in one hand, drop Threading Arm into hole on that spool, arrow end toward the Platen.

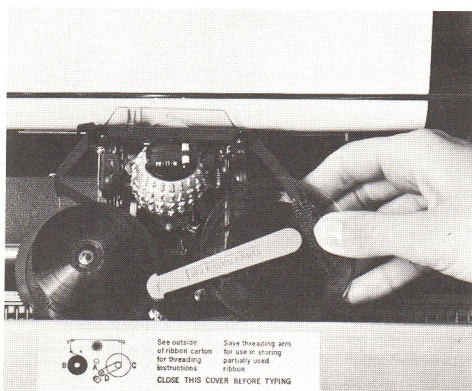
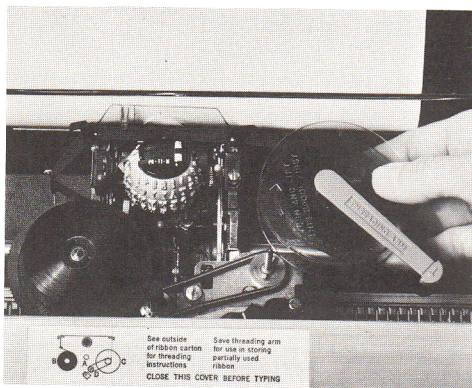
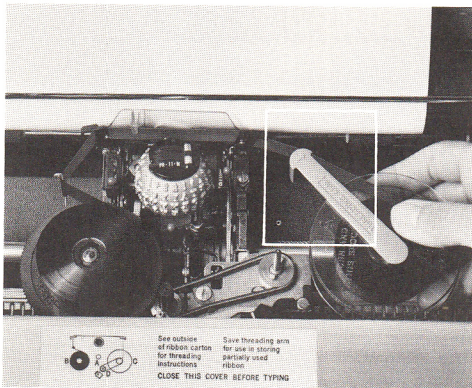
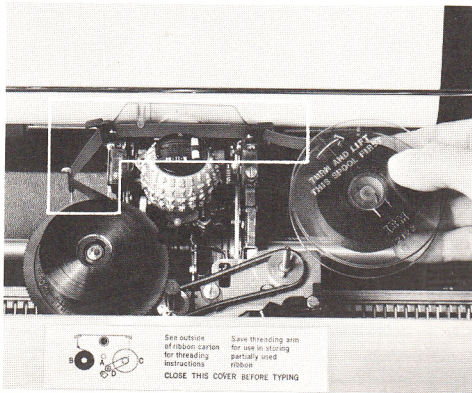
6. Turn the Threading Arm in the direction of the arrow to move the ribbon until it is positioned over the Rollers.

7. Drop plastic take-up spool onto right Spindle and Threading Arm over Roller.

8. Spool will click into place. Remove Threading Arm.

9. Pull Ribbon Load Lever toward you so Ribbon Guides will drop into place behind Font and Rollers will close.

10. Reposition Carrier Cover.



Care and Cleaning

Since erasing is not a general practice in cold type composition your responsibilities for the care of your IBM "Selectric" Composer are greatly reduced. The best preventive maintenance is to keep dust out of your machine by keeping the Cover down when not in use. At night, cover it with the dust cover which came with your equipment.

The case of your Composer is die-cast aluminum with a crackle finish. This case and the keybuttons are best cleaned by using a sponge or soft cloth dampened with soap and water. *Only in extreme cases should you use a liquid cleaner, and then very sparingly. Never apply it directly to the machine case or any of its parts—only on a sponge or soft cloth.*

CAUTION: *Never lubricate your IBM "Selectric" Composer.* Special oils have been used, and any oil which is not of the same viscosity or manufacture will be incompatible with the Composer lubricant. Your IBM Customer Engineer can service your "Selectric" Composer on a regularly scheduled basis. The only parts of the machine which you may need to clean personally are the Card Holder, Platen, and Feed Rolls.

Card Holder

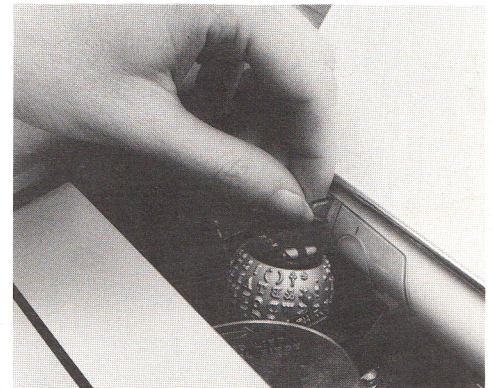
To clean the Card Holder *use soap and water only*. Dry it thoroughly before replacing.

To remove the Card Holder, grasp the small handle and lift it straight up.

Replace the Card Holder by dropping it lightly between the Type Font and the Platen, making sure that the cut out sections at the bottom of the Card Holder fit securely over the metal racks on the Carrier. Push the Card Holder down until it clicks into place.

Platen and Feed Rolls

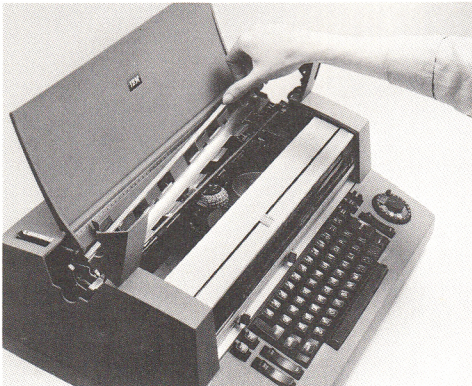
Wipe them with a damp cloth. In more extreme cases, commercial cleaners are available through your stationery suppliers. *However, use the liquids sparingly (again, on a sponge or cloth), and avoid spilling any of the liquid on the case or keybuttons. All parts to be cleaned should be completely removed from the Composer first.*





To Remove the Platen

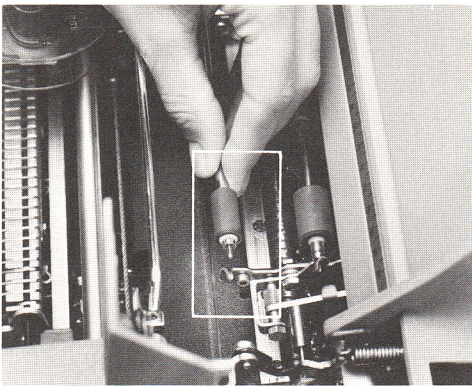
To remove the Platen, position the Carrier in the center, and turn the motor off. Pull the Paper Release Lever forward. (The Paper Bail will come forward, too.) Lift up the Platen End Covers. Place your thumbs on the left and right Platen Release Levers. Depress these Release Levers, and the Platen will rise from its position. Then merely lift it out of the Composer.



To Remove Feed Rolls

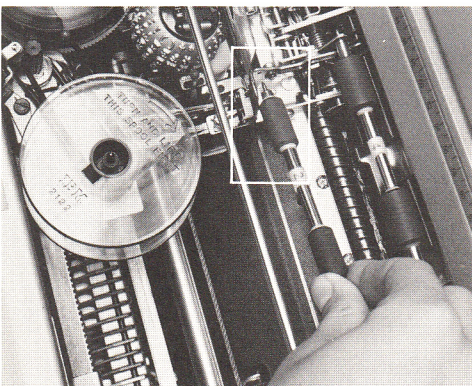
Before removing the Feed Rolls, you must first lift out the Paper Deflector. With the Platen out of the machine, grasp the toothed edge of the Paper Deflector and lift up and toward you. Use care in removing this so you will not bend the Deflector or the tines on either end of it.

To clean the Deflector, merely wipe it off with a dampened sponge.



There are four sets of Feed Rolls. Notice that the two rear sets are larger than the front ones. Each Feed Roll is cradled in a pair of arms which contain a round opening on one side and a slot opening on the other. The round openings are in the center cradle arms.

To remove the Feed Rolls, hold between thumb and forefinger. Lift out slot end first, and then remove from hole on opposite end. Use same procedure for all four Feed Roll shafts.



To Replace Feed Rolls

Remember that the larger Feed Rolls go to the rear; the smaller ones in front. Each Feed Roll shaft is numbered. With the shaft number facing you, replace the Feed Rolls in the following sequence: number one, left front; number two, right front; number three, left rear; and number four, right rear.

Replace the Paper Deflector by holding the toothed edge toward you. Lower it into the Composer (toward the back and down) until the tines on either end straddle the two grooved studs on the outside of the Feed Roller assembly. Push it gently until it clicks into place.

To Replace Platen

Hold the Platen with the Leading Dial and the Zero Index Lever at the right. Keep the Zero Index Lever in an upright position as you drop the groove of the Platen into the Right Platen Latch. Once the Platen is in place, press down on the Platen (not the Knobs), and it will snap into place. Next, close the Platen End Covers. Push the Zero Index Lever away from you, and it automatically repositions itself. Slide the Paper Release Lever back into position, and you are ready to type again.

Justification Tube

As you have noticed, pulling down the Justification Lever causes the Justification Tube to move (so color will move into the Window to give you a scale reading).

Notice, also, that the Justification Tube actually consists of two parts—the *outer* Tube and the *inner* portion across which it moves.

If movement of the Justification Tube becomes sluggish, this can be easily remedied by wiping off the exposed portions of the inner Tube.

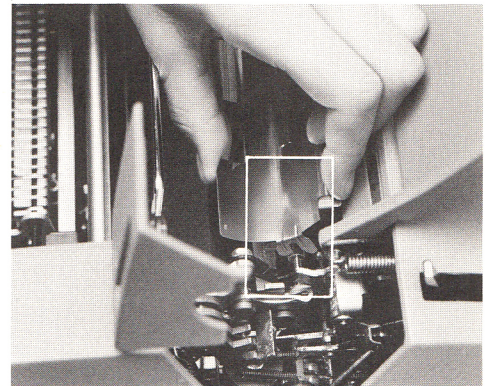
To clean the right portion of the inner Tube, return the Carrier and pull down the Justification Lever. Then clean the exposed part of the Tube by wiping it with a cloth dampened with water or cleaning fluid. As you clean the Tube, space slowly. This causes the inner Tube you are cleaning to turn so you clean it all around.

To clean the left portion, first move the Carrier to the right until the bell rings and the Justification Tube has moved all the way to the right. This exposes the left portion of the inner Tube so you can clean it. Pull down the Justification Lever and wipe the Tube clean, spacing to cause it to rotate.

The Tube stops turning after you have spaced 20 times.

Serial Number

To locate the Serial Number, tab the Carrier all the way to the right. Turn the motor off and fold back the Carrier Cover. The Serial Number is located below the Platen and Feed Rolls toward the left on the metal bar.



Refinements

Basic Machine Adjustments

Scales

To eliminate any confusion in reading the Carrier Position Scale, move the sliding Centering Scale to the left when not in use.

With the zero of the Centering Scale directly above the zero on the Carrier Position Scale, the numbers on the two Scales match up to give the appearance of one Scale.

Carrier Positioning

Card Holder Alignment Guides

If you have occasion to roll the paper up in the machine, but you plan to return to the same line to continue typing, use the left, four-point Platen Knob instead of the right Knob to roll the paper up, and, later, back down again.

It is easier for the eye to see when the black line on the Card Holder is back on the base line when the paper moves four points at a time instead of one.

Space Bar

For rapid forward movement of the Carrier, set the Space Bar Value Dial on 9, and hold down the Space Bar. This repeat spacing action is three times as fast as when the Value Dial is set for the customary three-unit adjustment.

Tab Key

When there is no tab stop at a particular position, you can move the Carrier forward quickly by depressing the Tab Key. Then, as the Carrier nears the desired position, depress the Tab Locate Control, which will stop the Carrier. If you are short of the desired position, depress the Tab Key until you are to the exact position. It is faster to use this method to move to the far right of the Composer than to stop at every pica using the customary Tab Locate procedure.

Partial Carrier Return

When you have occasion to tabulate to begin two or more successive lines—such as the three lines in the lower, right-hand corner of the example to the left.

Diagram illustrating a sample form layout on a typewriter carriage. The form includes a table with columns for 'ET' and 'DE', and rows for 'PERCENT—QUOTA Month-To-Date' and '%'. Below the table are fields for 'OP. MANAGER' and 'DATE'. At the bottom, a distribution list is provided: 1 - District Manager, 2 - Branch Office File, 3 - Sales records & Analysis Dept. - OPHQ.

ET	DE
%	%

OP. MANAGER _____ DATE _____

Distribution: 1 - District Manager
2 - Branch Office File
3 - Sales records & Analysis Dept. - OPHQ

Use the partial-Carrier-return shortcut. This is possible, because depressing the Tab Key while the Carrier is in motion causes the Carrier to reverse directions and go back to the nearest tab location. To illustrate:

In typing the material in the preceding example, first type a line, and flick the Return Key. Then, *as soon as the Carrier has traveled slightly to the left of the point where the second line of copy is to begin, flick the Tab Key*. The Carrier will immediately swing back to the tab position it has just passed.

This saves the time it would take to let the Carrier return to the left margin and then tab in to begin the next line.

Keyboard Arrangement

Cent Sign

To create a cent sign (¢) on your Composer, type a lowercase “c,” backspace four units, and type a slash. Result: ¢

Underscores—Horizontal Lines

Since emphasis is often given to words by use of an italic or bold type face, there is no underscore on the alphabetic Composer Fonts. When underscores or horizontal rules are necessary, there are several ways to create them.

Hand ruling with pen and ink produces perfectly aligned rules of the precise point-size desired.

However, if you wish to create horizontal lines directly at the Composer, this can be done with either the special Ruling Font or with the dash on the alphabetic Fonts.

The Ruling Font has been designed specifically for creating rules on the Composer. There are five rules of varying point-size thicknesses which produce solid lines. If you have a Ruling Font, review the “Horizontal Characters Extending Under the Copy” section of the RULING FONT TRAINING GUIDE.

When you do not have a Ruling Font, you can create rules with an alphabetic Font. Use a Font identified with a red triangle, and set the Escapement Lever on blue. This shorter escapement setting will crowd the dashes so they join to make a continuous line.

The thickness of the line will vary with the boldness of the Font you are using.

Remember that the dash prints in the middle of the writing line, so if the ruled line is to be an underscore, go down the appropriate number of points to place the line under the typed copy.

Vertical Lines

As with the horizontal lines, the vertical lines can be created several ways—by hand ruling, with the Ruling Font, or with the “l” on the Univers Font.

If you have a Ruling Font, you can create vertical lines at the Composer quite easily. The Ruling Font has vertical rules which vary from 1/2 point to 1 1/2 points in thickness. Review the “Vertical Rules” section of the special instruction booklet, RULING FONT TRAINING GUIDE.

When you do not have a Ruling Font, you can create rules with the lowercase “l” of a Univers Font, which is a sans-serif type style. Set the Leading Dial for one point less than the capital height (see the Appendix for Capital Height Chart) of the particular Font you have selected. This reduction of vertical spacing will cause the letters to join, forming a solid line.

Position the Carrier by spacing, type the lowercase “l,” and reposition on the next line by indexing and character backspacing.

The thickness of the line will vary with the boldness of the Font you select.

Justification

Pulling Down the Justification Lever

Should you inadvertently type part of the first word of a rough-copy line before realizing you have not yet pulled down the Justification Lever, there is no cause for concern. Just pull down the Lever and continue.

Remember, the purpose of pulling down the Justification Lever is to cause the machine to count Space Bar strokes. Since no action takes place until the first space is made on a line, the Justification Lever can be engaged at any point prior to that.

Rough-Copy Correction Methods

The main idea of error correction is to get the exact length of copy and number of Space Bar strokes in the rough copy so the amount of expansion necessary for justified copy can be measured. It does not matter in what order the spaces and characters occur; *e.g.*, all the spaces could be placed together as long as the total number of spaces were correct. Therefore, (1) if a comma is left out, put it in with the next word; (2) if a space is left out, put two after the next word; (3) if a word is omitted, type it at the end of the line. Just remember to type the line correctly when it is justified.

When an incorrect letter has been typed and the mistake is caught just after the next Space Bar stroke, character backspace (over the space and wrong letters). Type the correct letters over the incorrect ones; then push the Justification Lever up, space, bring Justification Lever back down, and continue typing.

When you space accidentally at the end of a rough-copy line, character backspace over the last character you want on your justified line and type that character again. Then raise the Tube, and take a new reading.

When a letter is left out of the rough copy and not caught until you are typing justified copy, determine the unit count of this letter and:

- a. Determine number of spaces on the line and value of the space to see whether the proper number of units can be subtracted.
- b. Subtract the number of units in the letter which was omitted, either manually or by adjusting the Justification Dial.
- c. Reverse the process described in (a) and (b) when there are too many letters or when a letter is substituted by one of fewer units; *e.g.*, when the line to be justified is shorter than the line measured with rough copy. In this case, more space must be added between words—either manually or through adjustment of the Justification Dial.

Punctuation at the Ends of Lines

No adjustment needs to be made for lines ending with punctuation marks in the majority of normal justification

applications. Below are sample lines justified by the normal procedure:

If a line should end with a period or comma, you can adjust it to cause this punctuation mark to fall one unit farther to the right of the line. Just increase the scale reading by 1.

However, if you are doing justification where the requirements are more critical and you want the periods and commas to extend one unit farther to the right, this can be done very easily. Simply increase the number portion of your scale reading by one. That is, if your Justification Window scale reads blue 6, set the Justification Dial for blue 7; if the scale reads orange 3, set the Dial for orange 4; etc. The result will be as follows:

If a line should end with a period or comma, you can adjust it to cause this punctuation mark to fall one unit farther to the right of the line. Just increase the scale reading by 1.

The only exception to this procedure is when increasing the setting by one causes the Quantity Dial to be set for a number higher than the number of spaces in the line. (You do not have to count the number of spaces. Just look at the number showing in the Space Counter Window at the far right of the Justification Tube.)

If increasing the Quantity Dial setting does cause the setting to be for a number higher than the number of spaces in the line, set the *Value Dial* at the *next color below* the one you originally would have used, and set the *Quantity Dial* for 1.

To illustrate, if the scale reading is blue 6 and the Window shows you have only 6 spaces in the line, set the Dial for orange 1.

This procedure could also be used when a punctuation mark such as a colon, semicolon, or apostrophe is the last character on a line of justified copy.

Mixing Sizes of Type Within a Line

As you know, type comes in three basic widths requiring appropriate machine adjustments of red, yellow, or blue settings. Since changing from one size of type to another requires moving the Escapement Lever and Justification

Tube, your first reaction is that it is impossible to justify lines containing two sizes of type.

But it can be done, using a little extra effort.

The important thing is, you cannot move the Escapement Lever or change from one Justification Tube Window to another within a line. Instead, you must type all the rough-copy line in the same type, making allowances for the different size insertions which will come later; and you must type all the justified line in the same type, no-printing the words you will subsequently insert in a different type. Here's how.

Inserting Smaller Letters

When you are justifying with machine adjustments of red or yellow and you come to a word or words which must be a smaller size, type the rough-copy line without changing type, and record the scale reading.

When you justify this line, set the Justification Dial and type it as usual *except*, when you come to the words which are to be in smaller type, no-print them. This will leave space for you to go back and insert them after you have typed the rest of the line.

Using the appropriate Type Font and Escapement Lever setting, visually spread the smaller words in the blank space. Since the letters are smaller than those used in the original typing, you will allow more units between words than appeared there in the rough-copy line. With experience, you can learn to omit a letter or two when typing the rough copy so the blank space will more nearly fit the small insertion.

Or, if you prefer to have the exact space for the insertion, use the fixed-space procedure. First, using the appropriate escapement, type on scrap paper the word or words to be inserted. Directly beneath these words use the large escapement to type any combination of letters, which match the space used by the first typing. The combination of letters, which equals the space needed, will be used as fixed-space characters. Therefore, by following the fixed-space procedures you have learned, you can reserve a specific amount of space for the insertion.

Inserting Larger Letters

When justifying with machine adjustments of yellow or blue and you need to insert a word or words of a larger

size, type the rough-copy line without changing type and record the scale reading; but, type an additional character *or two* to allow extra units on the line. This will give you room to type in the same words in a larger size when justifying the line.

When you justify this line, type it as usual *except*, when you come to the words which are to be in larger type, no-print them. This will leave space for you to go back and insert them after you have typed the rest of the line.

At the completion of the line, change Fonts and the Escapement Lever setting, and fill in the larger word or words in the blank space on the line.

One way to reserve the exact space needed for a word or words in a larger escapement is to use the fixed-space procedure. First, using the appropriate escapement, type on scrap paper the word or words to be inserted. Then immediately beneath these words type a combination of letters in the smaller escapement which equals the space needed for the word or words to be inserted. Using the fixed-space procedure you have learned, you can reserve a specific amount of space for the insertion.

Justification Varieties

Justifying Especially Short Lines

When Color Bands Are Not in Middle of Justification Window

Remember, the method for justifying especially short lines using interletter and interword spacing depends on seeing the white line on the right edge of the blue color band. Therefore, the color bands have moved to the middle of the Justification Window scale.

However, if the material you want to have justified as one line is so very short, the Justification Tube has not moved enough to bring color into the Window—or far enough in to see the white line at the side of the blue band—you must take steps to make the Tube move.

Type one or more m's. (These, of course, will not be typed in your justified line. You are only typing them to move the color bands into the Window.) When you can see the white line at the edge of the blue color band, take a scale reading.

Add the unit value of the letters you added (m, in this example) to the scale reading. This unit value of the letters added plus the scale reading equal the number of units your line stopped short of the right margin. With this information, you are ready to proceed as usual to manually justify the line.

Crowding Copy to Justify

For lines which go beyond the right margin only a *few* units, you can justify the line by crowding—taking out units. This is slower than normal justification, and excessive crowding decreases readability, so it should be held to a minimum. However, in situations where you cannot or do not want to hyphenate a word but it is too long to delete, justify by crowding.

To find out how many units your line ended beyond the right margin, use your one-unit Backspace Key and backspace until the white line comes back into the Justification Window. Count the units as you backspace. For this example, let's assume you backspace twice to get the white line back to zero on the scale. Your next step is to tab to where you record your scale readings and type -2 to indicate that you are to take out two units to justify the line.

When you are ready to justify the line, choose two spaces between words where you want to take out one unit each. To take out one unit of space, set the Space Bar Value Dial for 3, space once, then backspace one unit.

For good typographic appearance it is best to remove these units following punctuation; or, if there is no punctuation in the line, choose areas in which a word starting with a tall character (f, h, k, l, t) follows a word ending in any other character.

Flush Right

The following shortcuts and alternate procedures are really extensions of the basic flush-right procedure you learned earlier.

Substituting 9-Unit Space Bar Strokes for m's

The letter m was chosen for no-printing for two reasons: It is one of the largest characters, thus one of the fastest to use. Also, it is one of the few letters on the Composer

which has the same unit value in uppercase (capital letters) as in lowercase. That permits you to capitalize every fifth or tenth m for ease of counting the letters and still not change the unit value with which you are working.

To type final copy, you can use your repeat-action Space Bar and space instead of no-printing m's. Set the Space Bar Value Dial for 9 and the Quantity Dial for the number of m's—now Space Bar strokes—required. Space repeatedly, and watch the Quantity Dial as it moves down to zero. Slow down to single spacing action as the Dial nears zero, the point at which you stop spacing.

You are then ready to add any additional units of space required before typing the material flush right. Remember to change the Value Dial back to 3 before you begin typing again.

Tabulating Before No-Printing m's

If you have margins set for a long writing line and want relatively short flush-right phrases, begin the rough-copy typing by tabulating part way across the line. This relieves you from having to type so many m's.

Remember, of course, to tab to the same position on the line when you begin to type final copy.

Tabulating to Avoid Using m's

When phrases you are typing flush right are of approximately the same length, such as the following:

District One
District Two
District Three
District Four

tabulate to a point where you can type a phrase and end near the right margin. If you stop typing within three picas of the margin, you will see the white line in the Justification Window without having to print any m's.

To illustrate, let's assume you are typing the following with margins of 6 and 24, a tab at 15 (or, to carry the shortcut a step further, with your left margin brought in to 15). Your rough copy with scale readings would be as follows:

District One	+15
District Two	+13
District Three	+ 7
District Four	+11

The few seconds of experimenting required to find the right tab setting is more than offset by the time saved typing, and later no-printing, m's for each of several lines.

(Since you are using your Space Bar Value Dial to space in the appropriate number of units to begin each line, remember to move the Dial back to 3 to type the phrases. A good way to remember to change the Dial is to set it, and leave your hand on the Dial as you space with your *left* thumb. This will serve as a reminder to move the Dial again before you start typing.)

Leader Lines

Leaders With Justified Right-Hand Columns

This alternate procedure applies when leader dots do not require space between them.

Type the rough-copy line as described earlier in this book, filling out the line with m's.

For your good copy, type the first portion of the line. Then for the leaders, type three periods for every m typed in the rough copy. (Remember, a period is worth three units, an m is nine.)

After the last period, you are ready to type the last portion of the line.

Centering

Justified Copy With Centered Headings

Parallel Justification

An easy method for centering headings at the same time you set copy is to type the heading with the left margin at zero and the Centering Scale zero at the center of the final copy.

Before beginning any of the copy, plan the margins so that the left margin is set on zero. Slide the Centering Scale over, so that its zero is positioned at the center of the final copy.

To center a heading, type it first at the left margin to determine the length of the copy. Notice where the Carrier

Position Indicator is resting. Tab and record the number that was read.

For final copy, continue across to position the Carrier on the number to the left of the Centering Scale zero which corresponds with the reading you recorded after the first typing of the heading. Type the heading, and it will be centered.

Serial Justification

When doing serial justification, type the headings in the sequence in which they occur, recording the Centering Scale reading.

Before setting any of the copy, slide the Centering Scale so that zero aligns with the left margin.

For rough copy, type the heading at the left margin. Read the number on the Centering Scale where the Carrier Position Indicator is resting. Tab and record this number.

For final copy, position the Centering Scale zero at the center of the line. Then position the Carrier to the left of zero at the recorded number and type the copy.

Horizontal Centering in Boxes

Spacing to Measure Width of a Box and Find Center

There are 72 points to an inch. There are 72 units to an inch when using a large type style (red adjustments). Therefore, if you set the Escapement Lever on red and space across the box, counting as you go, you will know how many units are in the box.

(Count by threes if the Space Bar Value Dial is set for 3, by fives if the Value Dial is set for 5, etc. Remember that you position the Carrier to begin spacing across by moving the Card Holder to the right and aligning the long vertical line with the left edge of the box. Hold the Card Holder in that far right position until you have spaced to the right edge of the box.)

Once you know how many units are in the box, return to the left edge and space across half the total number. With the Carrier in the center of the box, align zero of the sliding Centering Scale with the Carrier Position Indicator. Then, if you need to move the Escapement Lever from red

to yellow or blue to start typing and, in so doing, cause the Carrier to move slightly, you can realign it. Merely backspace or space forward to get the Carrier Position Indicator back in line with the zero on the Centering Scale.

Substituting a 6-Unit Character for Space Bar Strokes

The following is really an extension of the alternate method of centering previously presented. (See page 50.) The space to be distributed to the left and right of the copy is determined by no-printing a 6-unit character in this method rather than Space Bar strokes.

Slide the Card Holder to the right and position the Carrier so the vertical line on the Card Holder is aligned with the left edge of the box. Then release the Card Holder, depress the No-Print Key, and type the copy to be centered in the box.

Slide the Card Holder to the right again, then continue no-printing with a 6-unit character, such as the o. Count the characters as you strike them, until the vertical line on the Card Holder is aligned with the right edge of the box. (If the vertical line moves beyond the right edge of the box count the character. Also, backspace the necessary units to be aligned exactly by using the one-unit Backspace Key.)

This count of 6-unit characters is equal to the space left over after no-printing the copy to be centered. The left over space will be distributed between the left and right margins.

Return to the left edge of the box and align the vertical line on the Card Holder with the box. No-print half the number of 6-unit characters counted. (If your character count is an odd number, no-print another character, then backspace three units—half the unit value of the character.) Also, space forward half the number of backspaces that were necessary to be exactly aligned on the right edge.

Release the No-Print Key, and type the copy to be centered.

Vertical Centering

Finding Point to Begin Typing

Instead of counting down from the beginning of the box, some people prefer to start at the bottom and click up for

the number of points in the bottom margin plus a couple of points for the descender to arrive at the base line of writing. This is especially pertinent for centering only one line in a given area.

Others like to go to the middle of the box and space down. If you were centering one line of all cap letters, for example, you could go to the center of the box and space down *half* the number of points in the cap height of that type style and be in position to start typing.

Shortcut

Let's assume two conditions: the box in which you will be typing is deep enough that being off a point or two will not matter; you know the point size of the type you will be using and the amount of leading you want between lines, so you can set the Leading Dial for the amount of vertical spacing you want per line of type.

Align the horizontal line on the Card Holder at the top of the box, space down (by depressing the Return Key or Index Key), one line for each line of copy to go into the box. When you have spaced down for the last line of copy, continue spacing but start *counting* the number of lines you go down after those lines allowed for copy. In this way, you know how many lines will be left over in the box after typing copy. Divide that number by two, and you know how many lines to index down from the top of the box to begin typing.

Forms Construction

Flush Right

Setting Margin

Review: Flush-right lines end on the right margin, and the right Margin Set can be brought to the left only as far as 12 on the Scale.

If you are preparing a form with flush-right lines at the left, such as in this example:

name:
address:
city:

insert the paper in your machine far enough to the right so your right margin can be set appropriately.

No-Printing m's

To avoid doing rough copy for a flush-right section of a form on a separate sheet of paper, do it with the form in the machine. But, no-print the rough copy.

Type carefully so you know you have been accurate. (Don't worry if you do feel yourself make a typographical error, however. Simply character backspace and proceed.)

When you type the m's, continue no-printing and count as you go; then make a note of the number of m's you typed.

Appendix

Capital Height Chart

Name	Size	Height in Points
Aldine Roman	8 Medium, Bold, Italic	5
	10 Medium, Bold, Italic	6
	12 Medium, Bold, Italic	7
Baskerville	8 Medium, Bold, Italic	5
	9 Medium, Bold, Italic	6
	11 Medium, Bold, Italic	7
Bodoni	8 Medium, Bold, Italic	6
	10 Medium, Bold, Italic	7
	12 Medium, Bold, Italic	8
Century	6 Medium, Bold, Italic	5
	8 Medium, Bold, Italic	6
	9 Medium, Bold, Italic	7
	10 Medium, Bold, Italic	7
	11 Medium, Bold, Italic	8
Classified News	6 Medium, Bold	4.5
	8 Medium, Bold	6
	10 Medium, Bold	7
Copperplate Gothic	6 Medium	5
	8 Medium	6
	10 Medium	7
	12 Medium	8
Journal Roman	8 Medium, Bold, Italic, Bold Italic	5
	10 Medium, Bold, Italic, Bold Italic	6
	11 Medium, Bold, Italic, Bold Italic	7
Press Roman	7 Medium, Italic	5
	8 Medium, Bold, Italic, Bold Italic	6
	9 Medium, Bold, Italic, Bold Italic	6
	10 Medium, Bold, Italic, Bold Italic	7
	11 Medium, Bold, Italic, Bold Italic	8
Pyramid	8 Medium, Italic	5
	10 Medium, Italic	7
	12 Medium, Italic	8
Theme	8 Medium, Bold, Italic	6
	10 Medium, Bold, Italic	7
	11 Medium, Bold, Italic	8
Univers	7 Medium	4.5
	8 Light, Medium, Bold, Medium Italic	5
	10 Light, Medium, Bold, Medium Italic	7
	11 Light, Medium, Bold, Medium Italic	8
Univers Condensed	10 Medium, Bold, Medium Italic	7
	11 Light, Medium, Bold, Medium Italic	8

Vertical Centering Charts

How to Use

The following Vertical Centering Charts are a shortcut in centering lines in small areas. They tell you how many points to come down from the top of a box to begin typing the first line.

Find the cap height of the type you are using. Run your finger across that line until you come to the number representing the copy depth, expressed in points, of the copy you are centering.

Then run your finger down the chart, to the bottom half, until it is on the same line as the number of points available in the total area in which you are centering. The number on which your finger then rests is the number of points to come down from the top to start typing.

To illustrate, assume your cap height is 8, copy depth 25, and area depth 28. The lines meet at 10, as indicated on the diagram below:

		Total Copy Depth—Points																								
Cap Height*	5	-	-	-	-	-	10	11	12	13	14	15	16	17	18	19	20	21	22	23						
	6	-	-	-	-	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25						
	7	-	-	-	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27						
	8	-	-	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29						
	9	-	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31						
	10	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33						

Area Depth—Points	20	13	12	12	11	11	10	10	9	9	8	8	7	7	6	6	-	-	-	-					
	21	13	13	12	12	11	11	10	10	9	9	8	8	7	7	6	6	-	-	-					
	22	14	13	13	12	12	11	11	10	10	9	9	8	8	7	7	6	6	-	-					
	23	14	14	13	13	12	12	11	11	10	10	9	9	8	8	7	7	6	6	-					
	24	15	14	14	13	13	12	12	11	11	10	10	9	9	8	8	7	7	6	6					
	25	15	15	14	14	13	13	12	12	11	11	10	10	9	9	8	8	7	7	6					
	26	16	15	15	14	14	13	13	12	12	11	11	10	10	9	9	8	8	7	7					
	27	16	16	15	15	14	14	13	13	12	12	11	11	10	10	9	9	8	8	7					
	28	17	16	16	15	15	14	14	13	13	12	12	11	11	10	10	9	9	8	8					
	29	17	17	16	16	15	15	14	14	13	13	12	12	11	11	10	10	9	9	8					
	30	18	17	17	16	16	15	15	14	14	13	13	12	12	11	11	10	10	9	9					
	31	18	18	17	17	16	16	15	15	14	14	13	13	12	12	11	11	10	10	9					
	32	19	18	18	17	17	16	16	15	15	14	14	13	13	12	12	11	11	10	10					
	33	19	19	18	18	17	17	16	16	15	15	14	14	13	13	12	12	11	11	10					
	34	20	19	19	18	18	17	17	16	16	15	15	14	14	13	13	12	12	11	11					

*Cap height is used for simplicity. It is accurate to a fraction of a point in most instances. However, there are lowercase letters, such as b, d, f, and l, which may extend slightly above capital letters in certain type styles. Only in limited cases will the difference be as much as a point or more higher than cap height.

Centering Chart

For Centering More Than One Line of Copy

For Area Depth—20 to 44 points

		Total Copy Depth—Points																																
Cap Height*	5	-	-	-	-	-	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31						
	6	-	-	-	-	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33						
	7	-	-	-	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35						
	8	-	-	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37						
	9	-	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39						
	10	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41						

Area Depth—Points	20	13	12	12	11	11	10	10	9	9	8	8	7	7	6	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	21	13	13	12	12	11	11	10	10	9	9	8	8	7	7	6	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	22	14	13	13	12	12	11	11	10	10	9	9	8	8	7	7	6	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	23	14	14	13	13	12	12	11	11	10	10	9	9	8	8	7	7	6	6	-	-	-	-	-	-	-	-	-	-	-	-	-		
	24	15	14	14	13	13	12	12	11	11	10	10	9	9	8	8	7	7	6	6	-	-	-	-	-	-	-	-	-	-	-	-		
	25	15	15	14	14	13	13	12	12	11	11	10	10	9	9	8	8	7	7	6	6	-	-	-	-	-	-	-	-	-	-	-		
	26	16	15	15	14	14	13	13	12	12	11	11	10	10	9	9	8	8	7	7	6	6	-	-	-	-	-	-	-	-	-	-		
	27	16	16	15	15	14	14	13	13	12	12	11	11	10	10	9	9	8	8	7	7	6	6	-	-	-	-	-	-	-	-	-		
	28	17	16	16	15	15	14	14	13	13	12	12	11	11	10	10	9	9	8	8	7	7	6	6	-	-	-	-	-	-	-	-		
	29	17	17	16	16	15	15	14	14	13	13	12	12	11	11	10	10	9	9	8	8	7	7	6	6	-	-	-	-	-	-	-		
	30	18	17	17	16	16	15	15	14	14	13	13	12	12	11	11	10	10	9	9	8	8	7	7	6	6	-	-	-	-	-	-		
	31	18	18	17	17	16	16	15	15	14	14	13	13	12	12	11	11	10	10	9	9	8	8	7	7	6	6	-	-	-	-	-		
	32	19	18	18	17	17	16	16	15	15	14	14	13	13	12	12	11	11	10	10	9	9	8	8	7	7	6	6	-	-	-	-		
	33	19	19	18	18	17	17	16	16	15	15	14	14	13	13	12	12	11	11	10	10	9	9	8	8	7	7	6	6	-	-	-		
	34	20	19	19	18	18	17	17	16	16	15	15	14	14	13	13	12	12	11	11	10	10	9	9	8	8	7	7	6	6	-	-		
	35	20	20	19	19	18	18	17	17	16	16	15	15	14	14	13	13	12	12	11	11	10	10	9	9	8	8	7	7	6	6	-		
	36	21	20	20	19	19	18	18	17	17	16	16	15	15	14	14	13	13	12	12	11	11	10	10	9	9	8	8	7	7	6	6		
	37	21	21	20	20	19	19	18	18	17	17	16	16	15	15	14	14	13	13	12	12	11	11	10	10	9	9	8	8	7	7	6		
	38	22	21	21	20	20	19	19	18	18	17	17	16	16	15	15	14	14	13	13	12	12	11	11	10	10	9	9	8	8	7	7		
	39	22	22	21	21	20	20	19	19	18	18	17	17	16	16	15	15	14	14	13	13	12	12	11	11	10	10	9	9	8	8	7		
	40	23	22	22	21	21	20	20	19	19	18	18	17	17	16	16	15	15	14	14	13	13	12	12	11	11	10	10	9	9	8	8		
	41	23	23	22	22	21	21	20	20	19	19	18	18	17	17	16	16	15	15	14	14	13	13	12	12	11	11	10	10	9	9	8		
	42	24	23	23	22	22	21	21	20	20	19	19	18	18	17	17	16	16	15	15	14	14	13	13	12	12	11	11	10	10	9	9		
	43	24	24	23	23	22	22	21	21	20	20	19	19	18	18	17	17	16	16	15	15	14	14	13	13	12	12	11	11	10	10	9		
	44	25	24	24	23	23	22	22	21	21	20	20	19	19	18	18	17	17	16	16	15	15	14	14	13	13	12	12	11	11	10	10		
		Points to Go Down From Top of Area to Begin First Line																																

*Cap height is used for simplicity. It is accurate to a fraction of a point in most instances. However, there are lowercase letters, such as b, d, f, and l, which may extend slightly above capital letters in certain type styles. Only in limited cases will the difference be as much as a point or more higher than cap height.

For Area Depth—45 to 69 points

		Total Copy Depth—Points																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Cap Height*	5	-	-	-	-	-	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									</

Area Depth-Points	45	25	25	24	24	23	23	22	22	21	21	20	20	19	19	18	18	17	17	16	16	15	15	14	14	13	13	12					
	46	26	25	25	24	24	23	23	22	22	21	21	20	20	19	19	18	18	17	17	16	16	15	15	14	14	13	13					
	47	26	26	25	25	24	24	23	23	22	22	21	21	20	20	19	19	18	18	17	17	16	16	15	15	14	14	13					
	48	27	26	26	25	25	24	24	23	23	22	22	21	21	20	20	19	19	18	18	17	17	16	16	15	15	14	14					
	49	27	27	26	26	25	25	24	24	23	23	22	22	21	21	20	20	19	19	18	18	17	17	16	16	15	15	14					
	50	28	27	27	26	26	25	25	24	24	23	23	22	22	21	21	20	20	19	19	18	18	17	17	16	16	15	15					
	51	28	28	27	27	26	26	25	25	24	24	23	23	22	22	21	21	20	20	19	19	18	18	17	17	16	16	15					
	52	29	28	28	27	27	26	26	25	25	24	24	23	23	22	22	21	21	20	20	19	19	18	18	17	17	16	16					
	53	29	29	28	28	27	27	26	26	25	25	24	24	23	23	22	22	21	21	20	20	19	19	18	18	17	17	16					
	54	30	29	29	28	28	27	27	26	26	25	25	24	24	23	23	22	22	21	21	20	20	19	19	18	18	17	17					
	55	30	30	29	29	28	28	27	27	26	26	25	25	24	24	23	23	22	22	21	21	20	20	19	19	18	18	17					
	56	31	30	30	29	29	28	28	27	27	26	26	25	25	24	24	23	23	22	22	21	21	20	20	19	19	18	18					
	57	31	31	30	30	29	29	28	28	27	27	26	26	25	25	24	24	23	23	22	22	21	21	20	20	19	19	18					
	58	32	31	31	30	30	29	29	28	28	27	27	26	26	25	25	24	24	23	23	22	22	21	21	20	20	19	19					
	59	32	32	31	31	30	30	29	29	28	28	27	27	26	26	25	25	24	24	23	23	22	22	21	21	20	20	19					
	60	33	32	32	31	31	30	30	29	29	28	28	27	27	26	26	25	25	24	24	23	23	22	22	21	21	20	20					
	61	33	33	32	32	31	31	30	30	29	29	28	28	27	27	26	26	25	25	24	24	23	23	22	22	21	21	20					
	62	34	33	33	32	32	31	31	30	30	29	29	28	28	27	27	26	26	25	25	24	24	23	23	22	22	21	21					
	63	34	34	33	33	32	32	31	31	30	30	29	29	28	28	27	27	26	26	25	25	24	24	23	23	22	22	21					
	64	35	34	34	33	33	32	32	31	31	30	30	29	29	28	28	27	27	26	26	25	25	24	24	23	23	22	22					
	65	35	35	34	34	33	33	32	32	31	31	30	30	29	29	28	28	27	27	26	26	25	25	24	24	23	23	22					
	66	36	35	35	34	34	33	33	32	32	31	31	30	30	29	29	28	28	27	27	26	26	25	25	24	24	23	23					
	67	36	36	35	35	34	34	33	33	32	32	31	31	30	30	29	29	28	28	27	27	26	26	25	25	24	24	23					
	68	37	36	36	35	35	34	34	33	33	32	32	31	31	30	30	29	29	28	28	27	27	26	26	25	25	24	24					
	69	37	37	36	36	35	35	34	34	33	33	32	32	31	31	30	30	29	29	28	28	27	27	26	26	25	25	24					
Points to Go Down From Top of Area to Begin First Line																																	

Centering Chart

For Centering One Line of Copy

For Area Depth—8 to 43 points

		Type Size as Used							
Cap Height*	5					5	6	7	8
	6				6	7	8	9	10
	7			7	8	9	10	11	12
	8		8	9	10	11	12		
	9	9	10	11	12				

		Type Size as Used							
Cap Height*	5					5	6	7	8
	6				6	7	8	9	10
	7			7	8	9	10	11	12
	8		8	9	10	11	12		
	9	9	10	11	12				

Area Depth—Points	8	-	-	-	7	7	6	-	-
	9	-	-	8	8	7	7	6	-
	10	-	9	9	8	8	7	7	6
	11	10	10	9	9	8	8	7	7
	12	11	10	10	9	9	8	8	7
	13	11	11	10	10	9	9	8	8
	14	12	11	11	10	10	9	9	8
	15	12	12	11	11	10	10	9	9
	16	13	12	12	11	11	10	10	9
	17	13	13	12	12	11	11	10	10
	18	14	13	13	12	12	11	11	10
	19	14	14	13	13	12	12	11	11
	20	15	14	14	13	13	12	12	11
	21	15	15	14	14	13	13	12	12
	22	16	15	15	14	14	13	13	12
	23	16	16	15	15	14	14	13	13
	24	17	16	16	15	15	14	14	13
	25	17	17	16	16	15	15	14	14
Points to Go Down From Top of Area to Begin First Line									

Area Depth—Points	26	18	17	17	16	16	15	15	14
	27	18	18	17	17	16	16	15	15
	28	19	18	18	17	17	16	16	15
	29	19	19	18	18	17	17	16	16
	30	20	19	19	18	18	17	17	16
	31	20	20	19	19	18	18	17	17
	32	21	20	20	19	19	18	18	17
	33	21	21	20	20	19	19	18	18
	34	22	21	21	20	20	19	19	18
	35	22	22	21	21	20	20	19	19
	36	23	22	22	21	21	20	20	19
	37	23	23	22	22	21	21	20	20
	38	24	23	23	22	22	21	21	20
	39	24	24	23	23	22	22	21	21
	40	25	24	24	23	23	22	22	21
	41	25	25	24	24	23	23	22	22
	42	26	25	25	24	24	23	23	22
	43	26	26	25	25	24	24	23	23
Points to Go Down From Top of Area to Begin First Line									

*Cap height is used for simplicity. It is accurate to a fraction of a point in most instances. However, there are lowercase letters, such as b, d, f, and l, which may extend slightly above capital letters in certain type styles. Only in limited cases will the difference be as much as a point or more higher than cap height.

For Area Depth—44 to 79 points

Cap Height*	Type Size as Used							
	5				5	6	7	8
	6				6	7	8	9 10
	7			7	8	9 10	11	12
	8		8	9 10	11	12		
	9	9	10	11	12			

Cap Height*	Type Size as Used							
	5				5	6	7	8
	6				6	7	8	9 10
	7			7	8	9 10	11	12
	8		8	9 10	11	12		
	9	9	10	11	12			

Area Depth—Points	44	27	26	26	25	25	24	24	23
	45	27	27	26	26	25	25	24	24
	46	28	27	27	26	26	25	25	24
	47	28	28	27	27	26	26	25	25
	48	29	28	28	27	27	26	26	25
	49	29	29	28	28	27	27	26	26
	50	30	29	29	28	28	27	27	26
	51	30	30	29	29	28	28	27	27
	52	31	30	30	29	29	28	28	27
	53	31	31	30	30	29	29	28	28
	54	32	31	31	30	30	29	29	28
	55	32	32	31	31	30	30	29	29
	56	33	32	32	31	31	30	30	29
	57	33	33	32	32	31	31	30	30
	58	34	33	33	32	32	31	31	30
	59	34	34	33	33	32	32	31	31
	60	35	34	34	33	33	32	32	31
	61	35	35	34	34	33	33	32	32
Points to Go Down From Top of Area to Begin First Line									

Area Depth—Points	62	36	35	35	34	34	33	33	32
	63	36	36	35	35	34	34	33	33
	64	37	36	36	35	35	34	34	33
	65	37	37	36	36	35	35	34	34
	66	38	37	37	36	36	35	35	34
	67	38	38	37	37	36	36	35	35
	68	39	38	38	37	37	36	36	35
	69	39	39	38	38	37	37	36	36
	70	40	39	39	38	38	37	37	36
	71	40	40	39	39	38	38	37	37
	72	41	40	40	39	39	38	38	37
	73	41	41	40	40	39	39	38	38
	74	42	41	41	40	40	39	39	38
	75	42	42	41	41	40	40	39	39
	76	43	42	42	41	41	40	40	39
	77	43	43	42	42	41	41	40	40
	78	44	43	43	42	42	41	41	40
	79	44	44	43	43	42	42	41	41
Points to Go Down From Top of Area to Begin First Line									

Recommended Impression Settings*

Type Size	Impression Setting
6 & 7 point <i>bold</i>	2
6, 7 & 8 point <i>light</i> <i>medium</i> <i>italic</i>	1
8 point <i>bold</i>	3
9 point <i>medium</i> <i>italic</i>	2
9 point <i>bold</i>	3
10 point <i>light</i> <i>medium</i> <i>italic</i>	2
10 point <i>bold</i>	4
11 & 12 point <i>light</i> <i>medium</i> <i>italic</i>	3
11 point <i>bold</i>	5
12 point <i>bold</i>	6

*Bear in mind that these are generalizations. Precise settings will depend on variances of individual machines and the supplies being used.

Character Count Chart

Number of Picas	Pica Equivalent in Inches	Number of Characters Per Pica By Escapement Lever Adjustment		
		Red	Yellow	Blue
1		2.5	2.9	3.3
2		5.0	5.8	6.6
3	½	7.5	8.7	9.9
4		10.0	11.6	13.2
5		12.5	14.5	16.5
6	1	15.0	17.4	19.8
7		17.5	20.3	23.1
8		20.0	23.2	26.4
9	1½	22.5	26.1	29.7
10		25.0	29.0	33.0
11		27.5	31.9	36.3
12	2	30.0	34.8	39.6
13		32.5	37.7	42.9
14		35.0	40.6	46.2
15	2½	37.5	43.5	49.5
16		40.0	46.4	52.8
17		42.5	49.3	56.1
18	3	45.0	52.2	59.4
19		47.5	55.1	62.7
20		50.0	58.0	66.0
21	3½	52.5	60.9	69.3
22		55.0	63.8	72.6
23		57.5	66.7	75.9
24	4	60.0	69.6	79.2
25		62.5	72.5	82.5
26		65.0	75.4	85.8
27	4½	67.5	78.3	89.1
28		70.0	81.2	92.4
29		72.5	84.1	95.7
30	5	75.0	87.0	99.0
31		77.5	89.9	102.3
32		80.0	92.8	105.6
33	5½	82.5	95.7	108.9
34		85.0	98.6	112.2
35		87.5	101.5	115.5
36	6	90.0	104.4	118.8
37		92.5	107.3	122.1
38		95.0	110.2	125.4
39	6½	97.5	113.1	128.7
40		100.0	116.0	132.0
41		102.5	118.9	135.3
42	7	105.0	121.8	138.6

Leading/Inch Conversion Chart

Leading Dial Setting	Lines Per Inch	Leading Dial Setting	Lines Per Inch
5	14.4	13	5.54
6	12	14	5.14
7	10.29	15	4.8
8	9	16	4.5
9	8	17	4.24
10	7.2	18	4
11	6.54	19	3.79
12	6	20	3.6

Character Unit Values

(Always the same regardless of point size of type)

In Alphabetical Order:

A-8	a -5	. -3
B-7	b -6	, -3
C-7	c -5	: -4
D-8	d -6	; -3
E-7	e -5	' -3
F-7	f -4	' -3
G-8	g -5	* -6
H-8	h -6	† -6
I -4	i -3	(-4
J -5	j -3	) -4
K-8	k -6	! -4
L-7	l -3	\$ -6
M-9	m-9	+ -6
N-8	n -6	/ -4
O-8	o -6	? -5
P -6	p -6	- -3
Q-8	q -6	$\frac{3}{4}$ -8
R-8	r -4	$\frac{1}{2}$ -8
S -6	s -4	&-8
T-7	t -4	—-8
U-8	u -6	%-8
V-8	v -5	= -6
W-9	w-8	[-5
X-8	x -6	] -6
Y-8	y -6	@-8
Z -7	z -5	$\frac{1}{4}$ -8

All Numbers = 6

Character Unit Values for Presswire Fonts

All Presswire Font characters have the same unit values as the “Selectric” Composer Fonts with the exception of the following:

All numbers = 4 units	% = 6 units
Composite fraction denominators = 8 units	& = 6 units
Composite fraction numerators	\$ = 4 units
1 = 5 units	+ = 8 units
3 and 7 = 8 units	
5 = 6 units	

By Unit Value:

3 units	4 units	5 units	6 units	7 units	8 units	9 units
i	f	a	b P	B	w V	m
j	r	c	d S	C	A X	M
l	s	e	h *	E	D Y	W
.	t	g	k †	F	G &	
,	I	v	n \$	L	H %	
;	:	z	o +	T	K @	
'	(	J	p =	Z	N —	
'	)	?	q]		O $\frac{3}{4}$	
-	!	[	u All		Q $\frac{1}{2}$	
	/		x numbers		R $\frac{1}{4}$	
			y		U	

Keyboard Reference Charts

The following charts show the keyboard location of the new characters that may be typed when using Language or Symbols Fonts. Except for the numerals, only the *changes* to your machine keyboard are shown on the charts.

The United Kingdom keyboard is not illustrated. The only change on the United Kingdom Font will be that the \$ will print as a £ sign.

Remember to use the Velocity Control Dial, setting the inner dial when using Language Fonts and the outer dial when using Symbols Fonts. For more detailed instructions read the "Specialized Fonts" section of this book.

Latin

1	2	3	4	5 ^M	6	7	8	9	0		Ñ
											↘ ^L ↙ ^L
										•• ^L ^ ^L	? ^M ç

Germanic

1	2	3	§	5	6	7	8	9	0		? ^M ß ^H
											ö
										ü	ä

Nordic

» 1	!	? 3	§	5	6	7	= 8	9	0		ø
											ö
										å	ä
								'	:	/ ^M	

Keyboard Reference Charts (Cont.)

Greek

◊ ^L ○	△ ⊕	† □	£ ☆	@ ■	• ^L ●	π ^L ▲	◇ ★	( ◊	) ◆	⋯ ~	Μ μ
Α α	Ψ ψ	Ξ ξ	Υ υ	Φ φ	Δ δ	Η η	Ι ι	Θ θ	Ρ ρ	Φ φ	
Ε ε	ϕ ^L ϕ	Λ λ	ϑ ^L ϑ	Ν ν	Κ κ	Σ σ	Π π	# ~ ^L	Τ τ	Υ υ	
Ζ ζ	Σ σ	Β β	Ο ο	Γ γ	Χ χ	Ω ω	€ ,	/ - ^L	⋮ \		

Mathematical

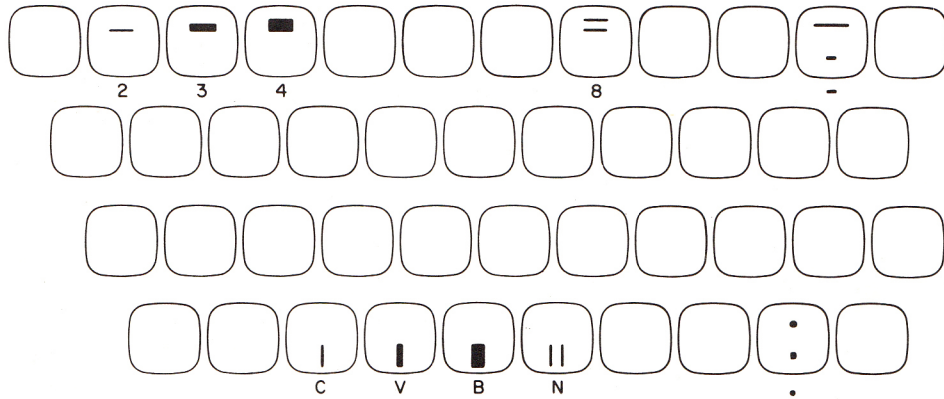
[1	- ^L 2	≡ 3	÷ 4	≪ 5	] 6	≡ 7	- ^L 8	(9	) 0	- /	~ ↘
≤ ∴	□ Σ	Δ ^L ◊	≠ f	∇ s	≠ π	≠ ÷	→ / ^L	= ∴ ^L	∂ g	+ ∴ ^L	
≈ →	Ω ^L !	≈ χ	≡ /	≫ φ	< ∴	• ^L =	> ↗	α ^L +	ℜ ^L π	∞ ||	
≈ 8	≤ ∠	Δ ^L s	≥ ⊥	≈ ±	× ÷	○ √	∴ .	| -	\ -		

Technical

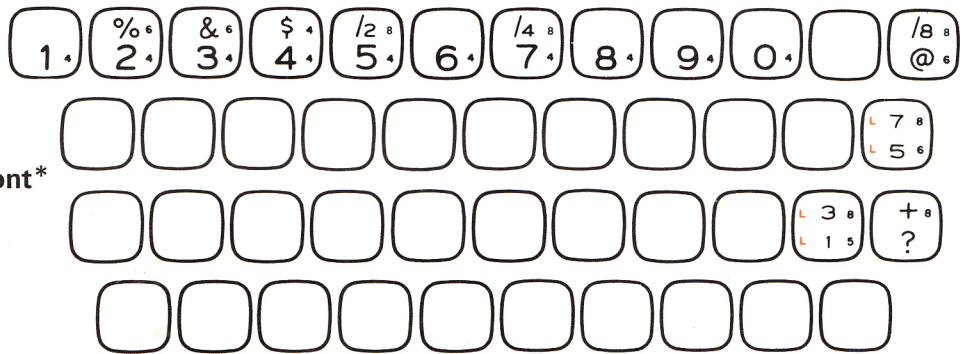
[1	♀ 2	∂ 3	Φ ^L 4	€ 5	] 6	♂ 7	(8	) 9	↔ ^M -	# b	
∩ α	ℋ ^L u	ℓ ^L l	Δ ^L Δ	+ ^L +	⌈ ⌈	⌋ ⌋	< ^L <	↔ ^L ↔	≠ ^L ≠	⊂ π	
← ←	↕ ↕	→ ↑	≡ /	→ β	↔ λ	↔ f	↔ ↓	↔ >	© o	® //	
⌈ ≡	+ =	⌋ ||	ℜ ^L ≡	€ γ	Å ^L - ^L	√ ~	∴ /	! .	∴ ∴		

Keyboard Reference Charts (Cont.)

Ruling Font



Presswire Font*



Copperplate Gothic



* Character unit values for the new and relocated characters, are indicated by the small numbers on this chart.

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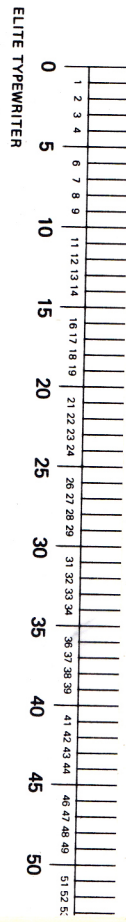
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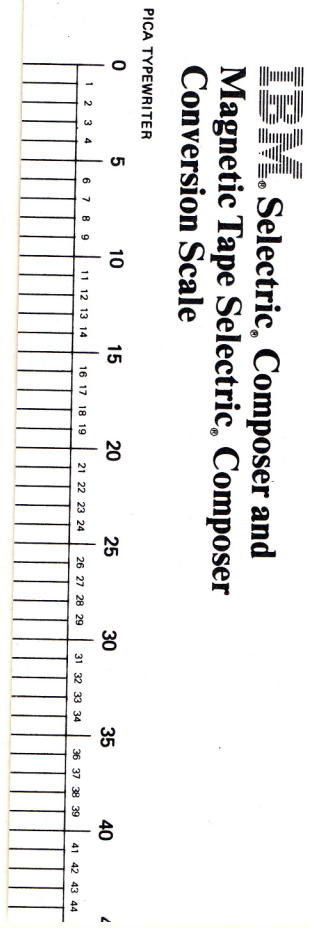
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5	14.4
6	12
7	10.29
8	9
9	8
10	7.2
11	6.54
12	6
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14	5.14
15	4.8
16	4.5
17	4.24
18	4
19	3.79
20	3.6



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